SONY

COLOR VIDEO CAMERA

BVP-550

Digital 1000

MAINTENANCE MANUAL
1st Edition (Revised 2)
Serial No. 15001 and Higher
Serial No. 50001 and Higher

⚠警告

このマニュアルは，サービス専用です。
お客様が，このマニュアルに記載された設置や保守，点検，修理など行うと感電や火災，人身事故につながることがあります。
危険をさけるため，サービストレーニングを受けた技術者のみご使用ください。

⚠WARNING

This manual is intended for qualified service personnel only.
To reduce the risk of electric shock, fire or injury, do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so. Refer all servicing to qualified service personnel.

⚠WARNUNG

Die Anleitung ist nur für qualifiziertes Fachpersonal bestimmt.
Alle Wartungsarbeiten dürfen nur von qualifiziertem Fachpersonal ausgeführt werden. Um die Gefahr eines elektrischen Schlages, Feuergefahr und Verletzungen zu vermeiden, sind bei Wartungsarbeiten strikt die Angaben in der Anleitung zu befolgen. Andere als die angegeben Wartungsarbeiten dürfen nur von Personen ausgeführt werden, die eine spezielle Befähigung dazu besitzen.

⚠ AVERTISSEMENT

Ce manual est destiné uniquement aux personnes compétentes en charge de l’entretien. Afin de réduire les risques de décharge électrique, d’incendie ou de blessure n’effectuer que les réparations indiquées dans le mode d’emploi à moins d’être qualifié pour en effectuer d’autres. Pour toute réparation faire appel à une personne compétente uniquement.

CAUTION

Danger of explosion if battery is incorrectly replaced.

Replace only with the same or equivalent type recommended by the manufacturer.
Dispose of used batteries according to the manufacturer's instructions.

Vorsicht!

Explosionsgefahr bei unsachgemäßem Austausch der Batterie.

Ersatz nur durch denselben oder einen vom Hersteller empfohlenen ähnlichen Typ.
Entsorgung gebrauchter Batterien nach Angaben des Herstellers.

ATTENTION

Il y a danger d'explosion s'il y a remplacement incorrect de la batterie.

Remplacer uniquement avec une batterie du même type ou d'un type équivalent recommandé par le constructeur.
Mettre au rebut les batteries usagées conformément aux instructions du fabricant.

ADVARSEL!

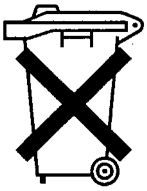
Lithiumbatteri-Eksplosionsfare ved fejlagtig håndtering.
Udskiftning må kun ske med batteri af samme fabrikat og type.
Levér det brugte batteri tilbage til leverandøren.

Voor de klanten in Nederland

Dit apparaat bevat een MnO_2-Li batterij voor memory back-up.

Raadpleeg uw leverancier over de verwijdering van de batterij op het moment dat u het apparaat bij einde levensduur afdankt.

Gooi de batterij niet weg. maar lever hem in als KCA.



Bij dit produkt zijn batterijen geleverd. Wanneer deze leeg zijn, moet u ze niet weggooien maar inleveren als KCA.

安全のために

ソニー製品は安全に十分に配慮して設計されています。しかし，電気製品はサービス時にまちがった扱い方をすると，火災や感電などにより死亡や大けがなど人身事故につながることがあり，危険です。
事故を防ぐために，サービストレーニングを受けた技術者以外はサービスを行なわないでください。
設置や保守，点検，修理などを行う前に，この「安全のために」と別冊のオペレーションマニュアルの「⚠警告・⚠注意」を必ずお読みください。

警告表示の意味

このサービス用のマニュアルおよび製品では，次のような表示をしています。表示の内容をよく理解してから本文をお読みください。

⚠危険

この表示の注意事項を守らないと，火災・感電・破裂などにより死亡や大けがになることがあります。

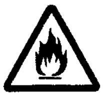
⚠警告

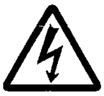
この表示の注意事項を守らないと，火災や感電などにより死亡や大けがなど人身事故につながることがあります。

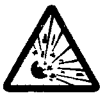
⚠注意

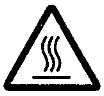
この表示の注意事項を守らないと，感電やその他の事故によりけがをしたり周辺の物品に損害を与えたりすることがあります。

注意 を促す記号

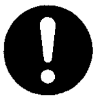

火災


感電


破裂


高温

行為を 指示 する記号


強制

⚠警告 火災 感電 下記の注意を守らないと，
火災や感電による死亡や大けがにつながることがあります。

強制

指定された部品を使用する

回路図，分解図，電気部品表中⚠印の部品（ヒューズ，電源ユニットなど）は安全性を維持するために重要な部品です。指定外の部品に交換すると火災，感電の危険があります。
必ずマニュアルで指定している部品を使用してください。

強制

指定されたCCU (カメラコントロールユニット) を使用する

指定以外のCCUを使用すると，火災や感電の原因となります。

⚠注意 下記の注意を守らないと，
けがをしたり周辺の物品に損害を与えることがあります。

強制

カメラの固定ねじを締めずに使用しない

カメラアダプターと一体化して運用するときは，カメラのショルダーパット部分にある固定ねじをしっかり締めてください。固定ねじを締めずに使用するとカメラとカメラアダプターが分離し，落下した機器でけがをすることがあります。

強制

部品の取り付けは正しく行う。

本機に以下の部品を取り付けるときは，オペレーションマニュアルをよく読んだうえ，確実に取り付けてください。取り付け方法を誤るとカメラが落下し，けがをすることがあります。

- レンズ
- 取っ手
- ショルダーベルト
- 三脚アタッチメント

強制

別売りのCCDユニットを取り付けるときは電源を遮断する

別売りのCCDユニットOHB-450/451/550/550WSをカメラに取り付けるときは，POWERスイッチをOFFにするだけでなく，全ての電源の接続を取り外してください。電源が接続されたままでCCDユニットの取り付けや取り外しを行うと，内部の接続用ハーネスが外装や他の基板などに触れ，ショートや感電することがあります。

電池についての安全上の注意

ここでは，本機での使用が可能なソニー製ニカド電池とリチウムイオン電池およびバックアップ用リチウム電池（搭載されていない機器もあります）についての注意事項を記載しています。

万一，異常が起きたら

- **煙が出たら**
  機器の電源スイッチを切るか，バッテリーチャージャーの電源プラグを抜く。
- **電池の液が目に入ったら**
  すぐきれいな水で洗い，ただちに医師の治療を受ける。
- **電池の液が皮膚や衣服に付いたら**
  すぐにきれいな水で洗い流す。
- **バッテリー収納部内で液が漏れたら**
  よくふき取ってから，新しい電池を入れる。

⚠危険

破裂

高温

下記の注意事項を守らないと，破裂•発火•発熱•液漏れにより，死亡や大けがになることがあります。

- 充電には，ソニーの専用バッテリーチャージャーを使用する。
  充電のしかたについては,バッテリーチャージャーの取扱説明書をよくお読みください。
- 火中に投入，加熱，はんだ付け，分解，改造をしない。
- 直射日光の当たるところ，炎天下の車内，ストーブのそばなど高温の場所で，使用•放置•充電をしない。
- ハンマーでたたくなどの強い衝撃を与えたり，踏みつけたりしない。
- 接点部や＋極と－極をショートさせたり，金属製のものと一緒に携帯•保管をしない。

⚠警告

破裂

高温

下記の注意事項を守らないと，破裂•発熱•液漏れにより，死亡や大けがなどの人身事故になることがあります。

- 所定の充電時間を超えても充電が完了しない場合は，充電をやめる。
- 電池使用中や充電，保管時に異臭がしたり，発熱•液漏れ•変色•変形などがあったときは，すぐに使用や充電をやめ，火気から遠ざける。

⚠注意

破裂

下記の注意事項を守らないと，破裂・液漏れにより，けがをしたり周辺の物品に損害を与えたりすることがあります。

- 投げつけない。
- 電池を使い切ったとき，長時間使わないときは，取り出しておいてください。
- 水や海水につけたり，濡らしたりしない。
- BC-310にNP-1Bを2本入れて使用するときは，2本とも完全に充電されたバッテリーを使用する。

ニカド電池のリサイクルについて

このマークはニカド電池のリサイクルマークです。

Ni-Cd

ニカド電池はリサイクルできる貴重な資源です。廃棄に際しては，金属部にセロハンテープなどの絶縁テープを貼ってニカド電池リサイクル協力店へご持参ください。

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このマニュアルについて

本書の目的

本書はカラービデオカメラ BVP-550 のメンテナンスマニュアルです。
本書は,システム/サービスエンジニアの方々にご使用いただくことを想定し,本機の納入設置時に必要な情報,保守に関する情報,部品レベルまでのサービスを前提とした情報（調整要項,回路図,マウント図,パーツリスト等）を記載しています。

構成

本書の構成を把握していただくために,全章の概略を以下に説明します。

第1章　設置

コネクタの入出力信号,システム接続例,基板内スイッチの機能等について記載しています。

第2章　サービスインフォメーション

基板配置図,回路概説,部品の交換方法,サービス時の注意事項等について説明しています。

第3章　設定メニュー

カメラの設定メニューおよび自己診断について説明しています。

第4章　電気調整要項

カメラの電気調整について記載しています。

Section 5. Spare Parts

本機に使用している部品のうち,サービス対象の分解図,部品リスト,標準付属品および治工具リストを記載しています。

Section 6. Semiconductor Pin Assignments

本機で使用している半導体の機能ブロック図,ピン名称を記載しています。

Section 7. Block Diagrams

本機のオーバーオールブロック図,基板ごとのブロック図を記載しています。

Section 8. Schematic Diagrams

本機の基板ごとの回路図とフレーム図を記載しています。

Section 9. Board Layouts

本機の基板ごとのマウント図を記載しています。

関連マニュアル

本機にはこのメンテナンスマニュアルの他に,下記のマニュアルが用意されています。

- **オペレーションマニュアル（本機に付属）**
  本機を実際に運用および操作するのに必要なマニュアルです。

- **システムマニュアル（別途用意）**
  本機と関連機器の接続および操作に必要なマニュアルです。
  入手を希望される方は,お買い上げいただいた機器の販売担当にお問い合わせください。

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Manual Structure

Purpose of this manual

This manual is the maintenance manual for Color Video Camera BVP-550.
This manual describes the information items necessary when the unit is supplied and installed, items on maintenance, and items that premise the service based on the components parts such as alignment, schematic diagrams, board layouts and spare parts list, assuming use of system and service engineers.

Contents

The following are summaries of the each section for understanding the manual.

Section 1. Installation

Describes information about connector input/output signals, instance of configuration and function of internal switches.

Section 2. Service Overview

Describes information about board locations, circuit description, replacement of part and notes on services.

Section 3. Setup menu

Describes information about setup menu and self-diagnosis mode.

Section 4. Electrical Alignment

Describes electrical adjustment.

Section 5. Spare Parts

Describes parts list, exploded views, supplied accessories and fixtures list usedin the unit.

Section 6. Semiconductor Pin Assignments

Describes function diagrams and pin names of semiconductor used in the unit.

Section 7. Block Diagrams

Describes overall block diagram and the block diagrams for every circuit board.

Section 8. Schematic Diagrams

Describes schematic diagrams for every circuit board.

Section 9. Board Layouts

Describes board layouts for every circuit board.

Relative manuals

Besides this maintenance manual the following manuals are available for this unit.

- **Operation Manual (Supplied with this unit)**
  This manual is necessary for application and operation of this unit.

- **System manual (Not supplied with this unit)**
  This manual is necessary for connection and operation of this unit and other peripheral equipments.
  If this manual is required, please contact Sony service organization

第１章
設置

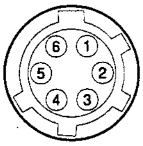
1-1. 適合コネクタとケーブル

1-1-1. コネクタ入出力信号

出力信号

- TEST OUT
  BNC 型 75 Ω 1.0 Vp-p

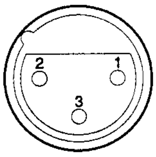
REMOTE (6P FEMALE)



(EXTERNAL VIEW)

No.	SIGNAL	SPECIFICATIONS
1	SERIAL DATA IN	Serial data for camera control
2	SERIAL DATA OUT	
3	UNREG (G)	
4	VBS (X) OUT	VBS 1 Vp-p, Zo = 75 Ω
5	VBS (G) OUT	
6	UNREG OUT	+ 10.5 V to + 17 V

MIC IN (3P FEMALE)

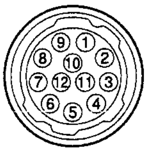


(EXTERNAL VIEW)

No.	SIGNAL	SPECIFICATIONS
1	MIC IN (G)	− 60 dBu High impedance balanced
2	MIC IN (X)	
3	MIC IN (Y)	

(0 dBu=0.775 Vrms)

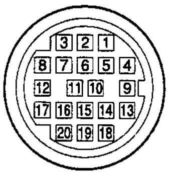
LENS (12P FEMALE)



(EXTERNAL VIEW)

No.	SIGNAL	SPECIFICATIONS
1	RET VIDEO ENABLE IN	ENABLE : 0 V DISABLE : ＋5 V or OPEN
2	RET 2 ENABLE IN	ENABLE : 0 V DISABLE : ＋5 V or OPEN
3	GND	GND for UNREG
4	AUTO ＋5 V OUT	AUTO : ＋5 V MANU : 0 V or OPEN
5	IRIS CONT OUT	＋3.4 V (F16) to ＋6.2 V (F2.8)
6	UNREG OUT	＋10.5 V to ＋17 V
7	IRIS POSITION IN	＋3.4 V (F16) to ＋6.2 V (F2.8)
8	AUTO/MANU OUT	AUTO IRIS : 0 V MANUAL IRIS : ＋5 V
9	EXTENDER ON/OFF IN	EX 2 ON : 0 V EX 0.8 ON : ＋1.8 V OFF : ＋4.8 V
10	ZOOM POSITION IN	WIDE : 2 V TELE : 7 V
11	NC	No connection
12	NC	No connection

VF (20P FEMALE)



(EXTERNAL VIEW)

No.	SIGNAL	SPECIFICATIONS
1	NC	No connection
2	ABNORMAL IND OUT	H : 点灯 , L : 消灯
3	16 : 9 MODE OUT	H : NORMAL (4 : 3) L : WIDE (16 : 9)
4	NC	No connection
5	COMP/VBS SW IN/OUT	*Note1
6	CCIR/EIA OUT	H : CCIR, L : EIA
7	NC	No connection
8	G TALLY OUT	H : 点灯 , L : 消灯
9	NC	No connection
10	Y (X) OUT	1 Vp-p, VF : Zi=1 kΩ
11	ZEBRA $\overline{\text{ON}}$ IN	H : OFF, L : ON
12	VF VIDEO OUT (X)	1.0 Vp-p, VF : Zi=1 kΩ
13	NC	No connection
14	B-Y (X) OUT	700 mVp-p, VF : Zi=1 kΩ, 75% color-bars
15	R-Y (X) OUT	700 mVp-p, VF : Zi=1 kΩ, 75% color-bars
16	BATT IND OUT	H : 点灯 , L : 消灯
17	TALLY IND OUT	H : 点灯 , L : 消灯
18	＋9.3 V (VF) OUT	REG ＋9.3 V
19	GND	GND
20	UNREG OUT	＋10.5 V to 17 V

*Note1 : COMP/VBS SW信号について

電源投入時, 5ピンの電圧を検出することにより接続されているVFをカメラ側のマイコンが識別する。

H : Color VF, L : B/W VF

- B/W VFの場合

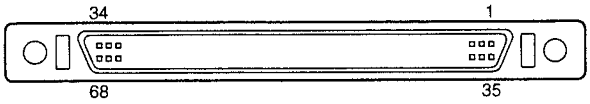
定常時5ピンの電圧コントロールは行わない。リターンビデオとVF用白黒信号の切り換えはカメラ側で行い, 12ピンよりVFに出力される。

- カラーVFの場合

定常時5ピンの電圧をコントロールすることにより,デコードされたリターンビデオとカメラコンポーネント信号をVF内で切り換え, 表示する。

H : Camera, L : Return video

ANALOG CA (68P FEMALE)



(EXTERNAL VIEW)

* : CCU 接続時 ** : VTR 接続時

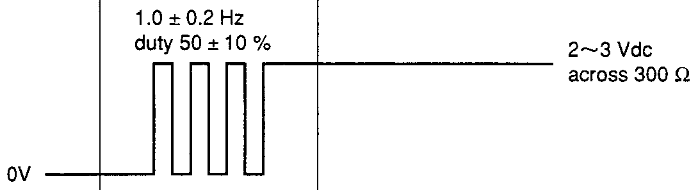
No.	SIGNAL	SPECIFICATIONS
1	UNREG GND	GND for UNREG
2	UNREG GND	GND for UNREG
3	VF UNREG GND	GND for VF UNREG
4	LENS UNREG GND	GND for LENS UNREG
5	UNREG IN	10.5 V to 17 V
6	UNREG IN	10.5 V to 17 V
7	VF UNREG IN	10.5 V to 17 V
8	LENS UNREG IN	10.5 V to 17 V
9	R OUT (X)	700 mVp-p ± 2%, DC 0 ± 200 mV, Zo = 75 Ω
10	B OUT (X)	700 mVp-p ± 2%, DC 0 ± 200 mV, Zo = 75 Ω
11	VBS OUT (G)	GND for VBS VIDEO
12	Y OUT (X)	VS 1.0 Vp-p, Zo = 75 Ω
13	B-Y OUT (X)	700 mVp-p, with sample 350 mV* 756 mVp-p (J) } 700 mVp-p (UC) } ** 525 mVp-p (CE) }
14	NC	No connection
15	C OUT (X)	SC for S connector
16	VBS GENLOCK IN (X)	1.0 Vp-p ± 6 dB
17	RET VIDEO IN (G)	GND for RET VIDEO
18	MONITOR VIDEO OUT (X)	VS 1.0 Vp-p, Zo = 75 Ω
19	BATTERY ALARM IN	Zi = 300 Ω *Note 2
20	NC	No connection
21	AUDIO CH1 CONT OUT	0 V (0 dB) to 7 V (− 50 dB or less)
22	MIC 1 OUT (Y)	Zo ≤ 600 Ω, − 60 dBu balanced
23	NC	No connection
24	SKIN TONE GATE OUT	1.0 Vp-p
25	TAPE REM IN	*Note 4
26	VTR SYNC OUT	+ 5.0 Vp-p Negative pulse, Zo ≤ 100 Ω
27	RET EN OUT	ENABLE ; 0 V, DISABLE ; + 5 V or OPEN
28	PB REF IN	PB ; + 4.5 V, CAM ; 0 V or OPEN
29	H CONT IN	0 V to 5 V, Analog
30	ANALOG GND	
31	DIGITAL HD OUT	3 Vp-p for Digital
32	COM CONT IN	5 Vp-p
33	IIC CLOCK OUT (CA)	5 Vp-p
34	IIC CLOCK OUT (ST)	5 Vp-p

No.	SIGNAL	SPECIFICATIONS
35	UNREG GND	GND for UNREG
36	UNREG GND	GND for UNREG
37	VF UNREG GND	GND for VF UNREG
38	LENS UNREG GND	GND for LENS UNREG
39	UNREG IN	10.5 V to 17 V
40	UNREG IN	10.5 V to 17 V
41	VF UNREG IN	10.5 V to 17 V
42	LENS UNREG IN	10.5 V to 17 V
43	G OUT (X)	700 mVp-p ± 2%, DC 0 ± 200 mV, Zo = 75 Ω
44	R/G/B GND	GND for R/G/B VIDEO
45	VBS OUT (X)	1.0 Vp-p ± 10%, Zo = 75 Ω
46	R-Y OUT (X)	700 mVp-p, with sync 350 mV* 756 mVp-p (J) } 700 mVp-p (UC) } ** 525 mVp-p (CE) }
47	Y/R-Y/B-Y GND	GND for Y/R-Y/B-Y
48	NC	No connection
49	C OUT (G)	GND for C
50	VBS GENLOCK IN (G)	GND for GENLOCK/H CONTIN
51	RET VIDEO IN (X)	1.0 Vp-p, Zi = 1 kΩ
52	MONITOR VIDEO OUT (G)	GND for MONITOR VIDEO
53	VTR START/STOP OUT	Zo ≤ 10 kΩ
54	NC	No connection
55	MIC 1 OUT (G)	GND for CAM MIC
56	MIC 1 OUT (X)	Zo ≤ 600 Ω, − 60 dBu balanced
57	NC	No connection
58	NC	No connection
59	AUDIO LEVEL IN	Zi ≥ 1 kΩ (− 15 dBu at 0 VU)
60	NC	No connection
61	V RESET IN/CF OUT	V Reset ; 0 V to + 5 V, CF ; 0 V to − 5 V
62	REC TALLY IN	ON ; + 5 V, OFF ; + 2.5 V or 0V, Zi ≥ 20 kΩ *Note 3
63	VTR SAVE OUT	SAVE ; + 4.5 V, STANDBY ; 0 V, Zo ≤ 10 kΩ
64	GND	
65	SD IN/OUT	Serial data for camera control
66	COM DATA OUT	5 Vp-p
67	IIC DATA IN/OUT (CA)	5 Vp-p, 4700 Ω, Pull up
68	IIC DATA IN/OUT (ST)	5 Vp-p, 4700 Ω, Pull up

(0 dBu=0.775Vrms)

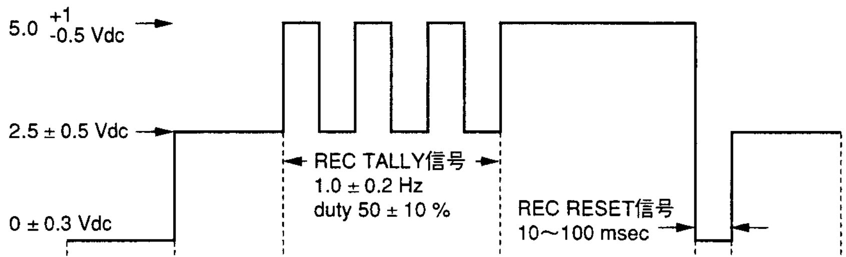
Note2 : BATT ALARM 信号について

VTR内には，バッテリ端子電圧検出回路およびWARNING信号発生回路があり，下図に示す信号をVTRからカメラに送っている。

バッテリ端子電圧 (VTR内蔵バッテリ)	12.0〜11.1 Vdc	11.1〜10.8 Vdc	10.8 Vdc以下
19ピン入力信号			
ビューファインダ内 LED	消灯	1 Hzで点滅	点灯

1.0 ± 0.2 Hz
duty 50 ± 10 %
2〜3 Vdc
across 300 Ω
0V

Note3 : REC TALLY 信号について

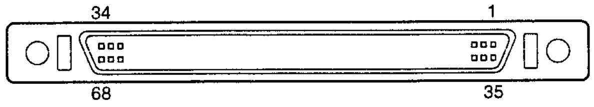
62ピン入力信号						
VTR動作	電源OFF	電源ON	POWER SAVE状態からREC START時またはサーボ外れ	STANDBY状態からREC START時またはRECモード	テープエンドまたはVTR側でSTOP操作時（カメラ側でSTOP操作した場合を除く）	STOPモード

$5.0 {}^{+1}_{-0.5}$ Vdc
2.5 ± 0.5 Vdc
0 ± 0.3 Vdc
REC TALLY信号
1.0 ± 0.2 Hz
duty 50 ± 10 %
REC RESET信号
10〜100 msec

Note4 : TAPE REM 信号について

TAPE 残量 (VTR)		25 ピン入力信号	備考
TAPE 1	TAPE 2		
＋5 V	＋5 V	＋3.4 V	
＋5 V	0 V	＋3.9 V	VF 内 G TALLY ランプ → 点灯
0 V	＋5 V	＋2.2 V	
0 V	0 V	0 V	

DIGITAL CA (68P FEMALE)



(EXTERNAL VIEW)

No.	SIGNAL	SPECIFICATIONS
1	Y (L) OUT	3.3 Vp-p
2	Y (2) OUT	
3	Y (4) OUT	
4	Y (6) OUT	
5	Y (8) OUT	
6	R-Y (L) OUT	3.3 Vp-p
7	R-Y (2) OUT	
8	R-Y (4) OUT	
9	R-Y (6) OUT	
10	R-Y (8) OUT	
11	B-Y (L) OUT	3.3 Vp-p
12	B-Y (2) OUT	
13	B-Y (4) OUT	
14	B-Y (6) OUT	
15	B-Y (8) OUT	
16	DIGITAL GND	GND for DIGITAL
17	DIGITAL BLANKING OUT	3.3 Vp-p
18	DIGITAL SYNC OUT	3.3 Vp-p
19	NC	No connection
20	NC	No connection
21	NC	No connection
22	NC	No connection
23	NC	No connection
24	NC	No connection
25	NC	No connection
26	NC	No connection
27	NC	No connection
28	NC	No connection
29	NC	No connection
30	NC	No connection
31	NC	No connection
32	NC	No connection
33	NC	No connection
34	18 MHz OUT (G)	GND for 18 MHz

No.	SIGNAL	SPECIFICATIONS
35	Y (1) OUT	3.3 Vp-p
36	Y (3) OUT	
37	Y (5) OUT	
38	Y (7) OUT	
39	Y (M) OUT	
40	R-Y (1) OUT	3.3 Vp-p
41	R-Y (3) OUT	
42	R-Y (5) OUT	
43	R-Y (7) OUT	
44	R-Y (M) OUT	
45	B-Y (1) OUT	3.3 Vp-p
46	B-Y (3) OUT	
47	B-Y (5) OUT	
48	B-Y (7) OUT	
49	B-Y (M) OUT	
50	DIGITAL GND	GND for DIGITAL
51	DIGITAL SAMPLE OUT	3.3 Vp-p
52	DIGITAL VD OUT	3.3 Vp-p
53	DIGITAL CF OUT	3.3 Vp-p
54	NC	No connection
55	NC	No connection
56	NC	No connection
57	NC	No connection
58	NC	No connection
59	NC	No connection
60	NC	No connection
61	NC	No connection
62	NC	No connection
63	NC	No connection
64	NC	No connection
65	NC	No connection
66	NC	No connection
67	NC	No connection
68	18 MHz OUT (X)	3.3 Vp-p

1-1-2. 接続コネクタ

設置時，サービス時においてコネクタ部の各種コネクタにケーブルを接続する際にはその先端に以下に示す接続コネクタまたはケーブルを使用すること。

コネクタ名称	接続コネクタ／ケーブル
TEST OUT (BNC)	1-560-069-11 Plug, BNC または B-B Cable assembly (1.5 m, 別売)
REMOTE (6P FEMALE)	1-560-078-00 Plug, 6P Male または HIROSE HR10-7PA-6P 同等品
MIC (3P FEMALE)	1-508-084-00 XLR, 3P Male または CANNON XLR-3-12C 同等品

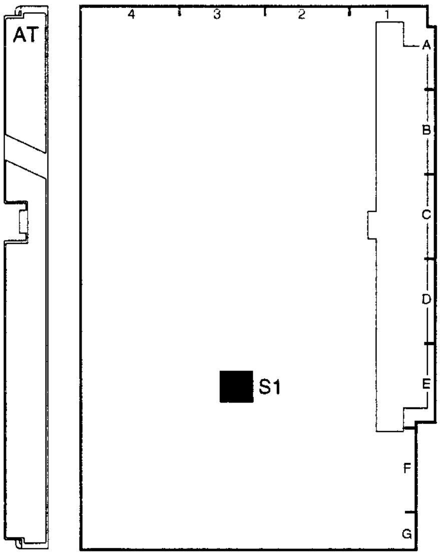
1-2. 使用環境

動作温度　：－20 ℃～＋45 ℃
保存温度　：－20 ℃～＋50 ℃
湿度　　　：結露状態でないこと

- 高温の部屋や熱源の近くは避けること
- 強電界や強磁界の場所に置かないこと
- 乾燥した通風の良い場所であること
- ほこりや振動の多い場所は避けること
- 太陽光線，強力ライトが直接あたる場所は避けること

1-3. 基板内スイッチの機能

AT-95 基板



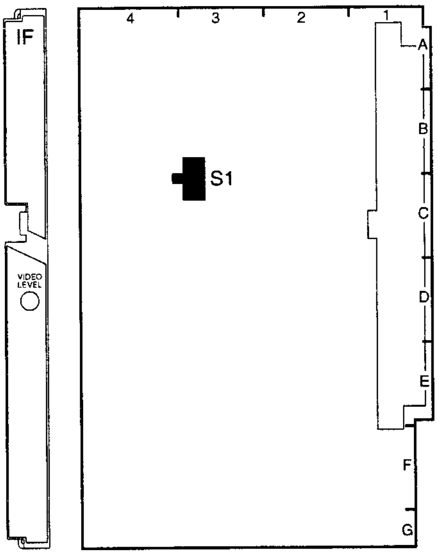
S1　：設定メニュー選択スイッチ (S1-1～4)
S1-1 から S1-4 の組み合わせによりビューファインダ上に表示される設定メニューを選択することができる。

(　) 内：工場出荷設定

				設定メニュー					
S1-1	S1-2	S1-3	S1-4	Operation	Paint	Maintenance	Reference	Triming	Config
OFF	OFF	OFF	OFF	YES	NO	NO	NO	NO	NO
(ON)	(OFF)	(OFF)	(OFF)	YES	YES	NO	NO	NO	NO
OFF	ON	OFF	OFF	YES	YES	YES	NO	NO	NO
ON	ON	OFF	OFF	YES	YES	YES	YES	NO	NO
OFF	OFF	ON	OFF	YES	YES	YES	YES	YES	NO
ON	OFF	ON	OFF	YES	YES	YES	YES	YES	YES

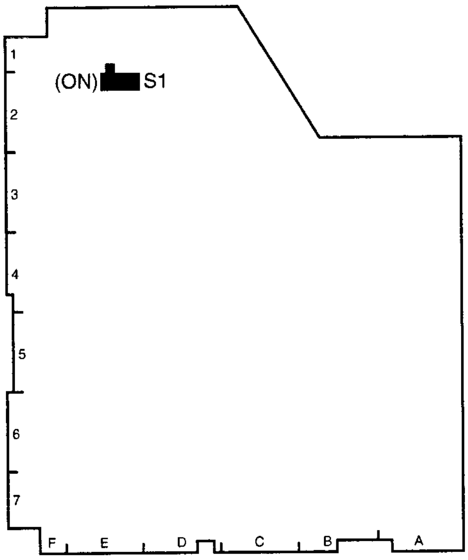
設定メニューの詳細については3章を参照してください。

IF-510基板


IF
VIDEO LEVEL
4
3
2
1
A
B
C
D
E
F
G
S1

S1　: VFコネクタ信号選択スイッチ
ビューファインダに出力する信号を選択する。
RET: CCUからのリターンビデオ信号
GEN : CAのGENLOCK INコネクタより入力した外部同期用基準信号
工場出荷時設定：RET

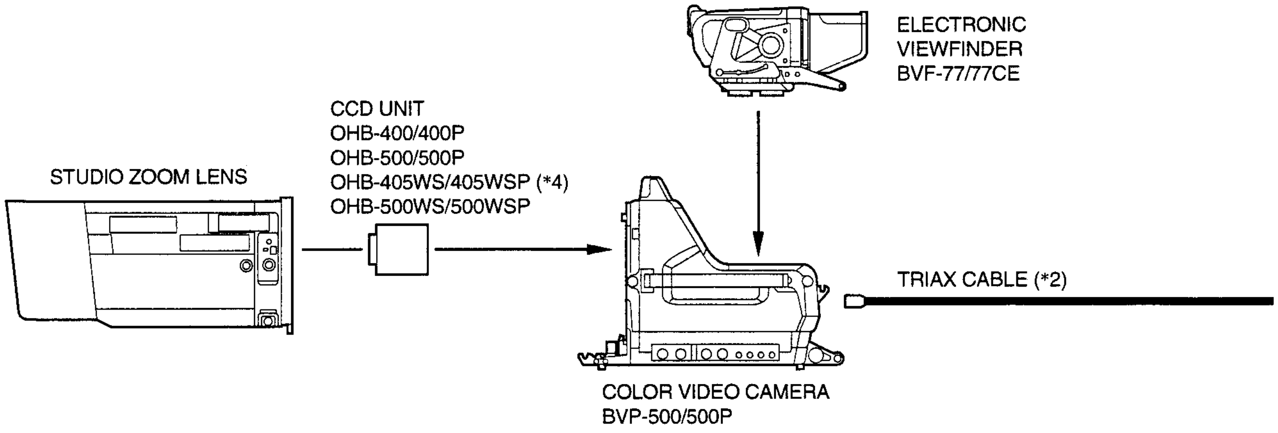
MB-602基板

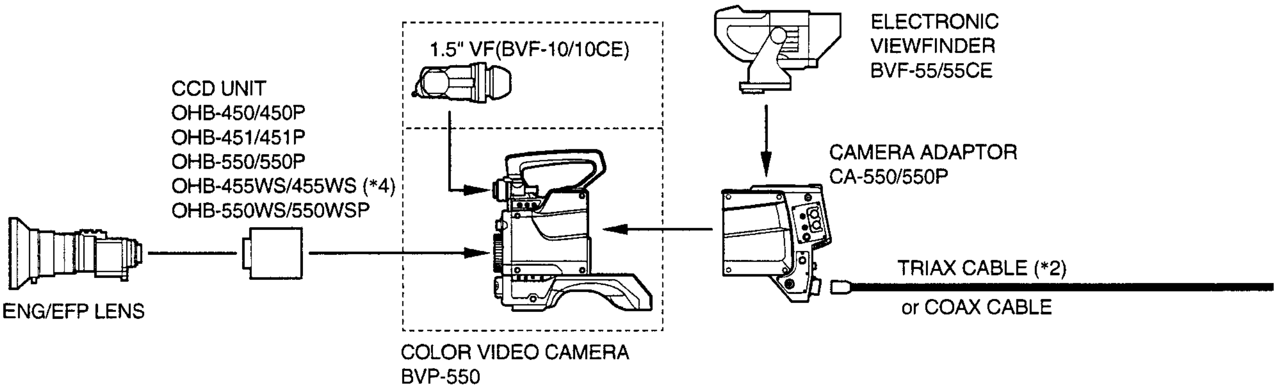

(ON)
S1
1
2
3
4
5
6
7
F
E
D
C
B
A

スイッチ設定変更時，左側板を開いてください。

S1　: PHANTOM POWERスイッチ
MICコネクタにPHANTOM +48 Vマイクを接続するときONにする。
工場出荷時設定：ON

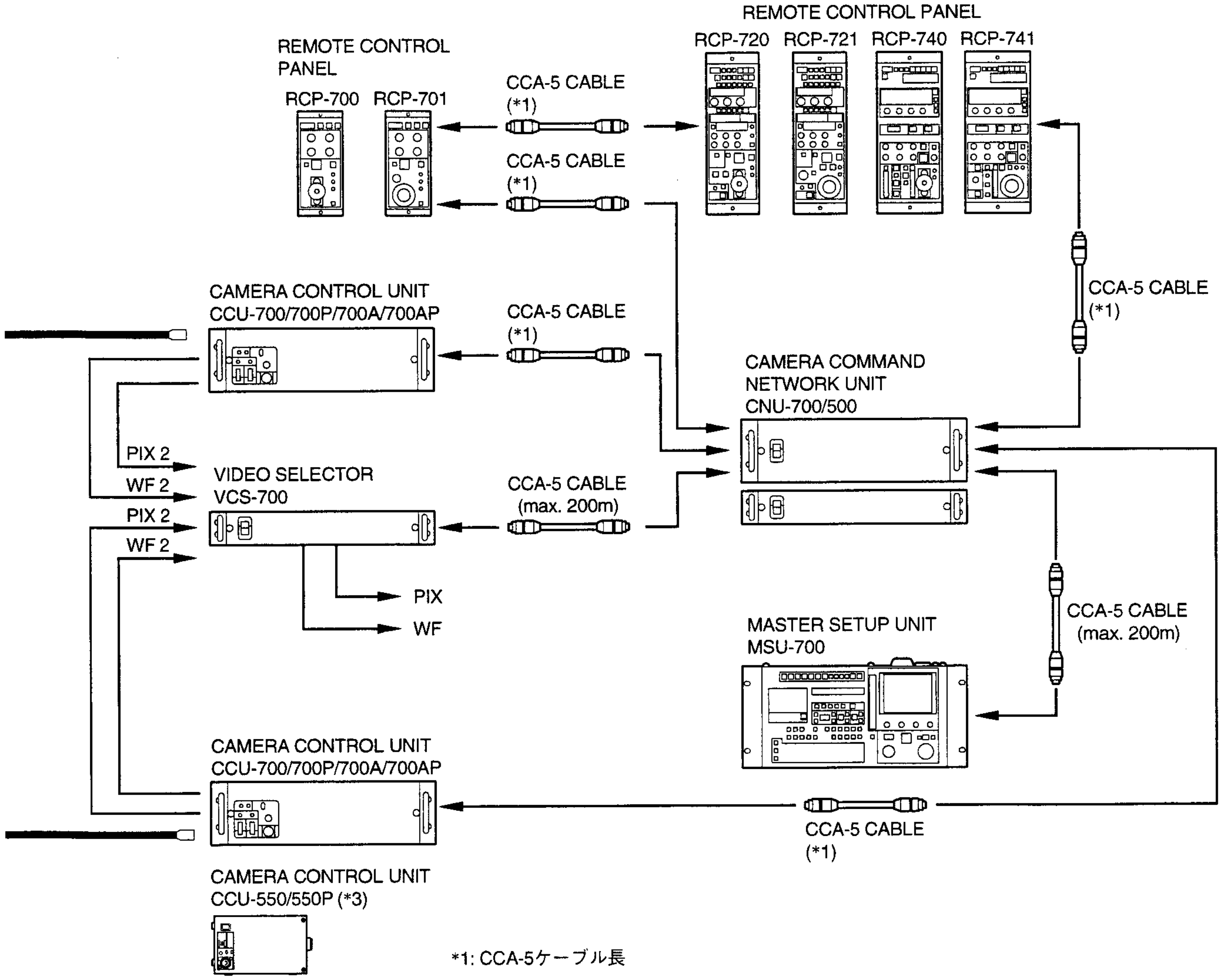
1-4. システム接続例


ELECTRONIC
VIEWFINDER
BVF-77/77CE
CCD UNIT
OHB-400/400P
OHB-500/500P
OHB-405WS/405WSP (*4)
OHB-500WS/500WSP
STUDIO ZOOM LENS
TRIAX CABLE (*2)
COLOR VIDEO CAMERA
BVP-500/500P

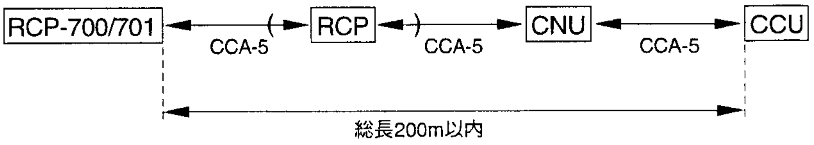

1.5" VF(BVF-10/10CE)
ELECTRONIC
VIEWFINDER
BVF-55/55CE
CCD UNIT
OHB-450/450P
OHB-451/451P
OHB-550/550P
OHB-455WS/455WS (*4)
OHB-550WS/550WSP
CAMERA ADAPTOR
CA-550/550P
TRIAX CABLE (*2)
or COAX CABLE
ENG/EFP LENS
COLOR VIDEO CAMERA
BVP-550

その他の別売アクセサリ

For BVP-500/500P	STANDALONE UNIT BKP-5910/5910P
	SCRIPT HOLDER BKP-7911/7912
For BVP-550	ELECTRET CONDENSER MICROPHONE ECM-MS5
	MICROPHONE C-74 (Sony P/N 1-542-099-11)
	CRADLE SUSPENSION CRS-3P
	CARRYING CASE LC-303SFT
For CA-550/550P	TELEPROMPTER UNIT BKP-5971


REMOTE CONTROL PANEL
RCP-700
RCP-701
CCA-5 CABLE (*1)
CCA-5 CABLE (*1)
REMOTE CONTROL PANEL
RCP-720
RCP-721
RCP-740
RCP-741
CCA-5 CABLE (*1)
CAMERA CONTROL UNIT CCU-700/700P/700A/700AP
CCA-5 CABLE (*1)
CAMERA COMMAND NETWORK UNIT CNU-700/500
PIX 2
WF 2
VIDEO SELECTOR VCS-700
PIX 2
WF 2
CCA-5 CABLE (max. 200m)
PIX
WF
CCA-5 CABLE (max. 200m)
MASTER SETUP UNIT MSU-700
CAMERA CONTROL UNIT CCU-700/700P/700A/700AP
CCA-5 CABLE (*1)
CAMERA CONTROL UNIT CCU-550/550P (*3)

*1: CCA-5ケーブル長


RCP-700/701
CCA-5
RCP
CCA-5
CNU
CCA-5
CCU
総長200m以内

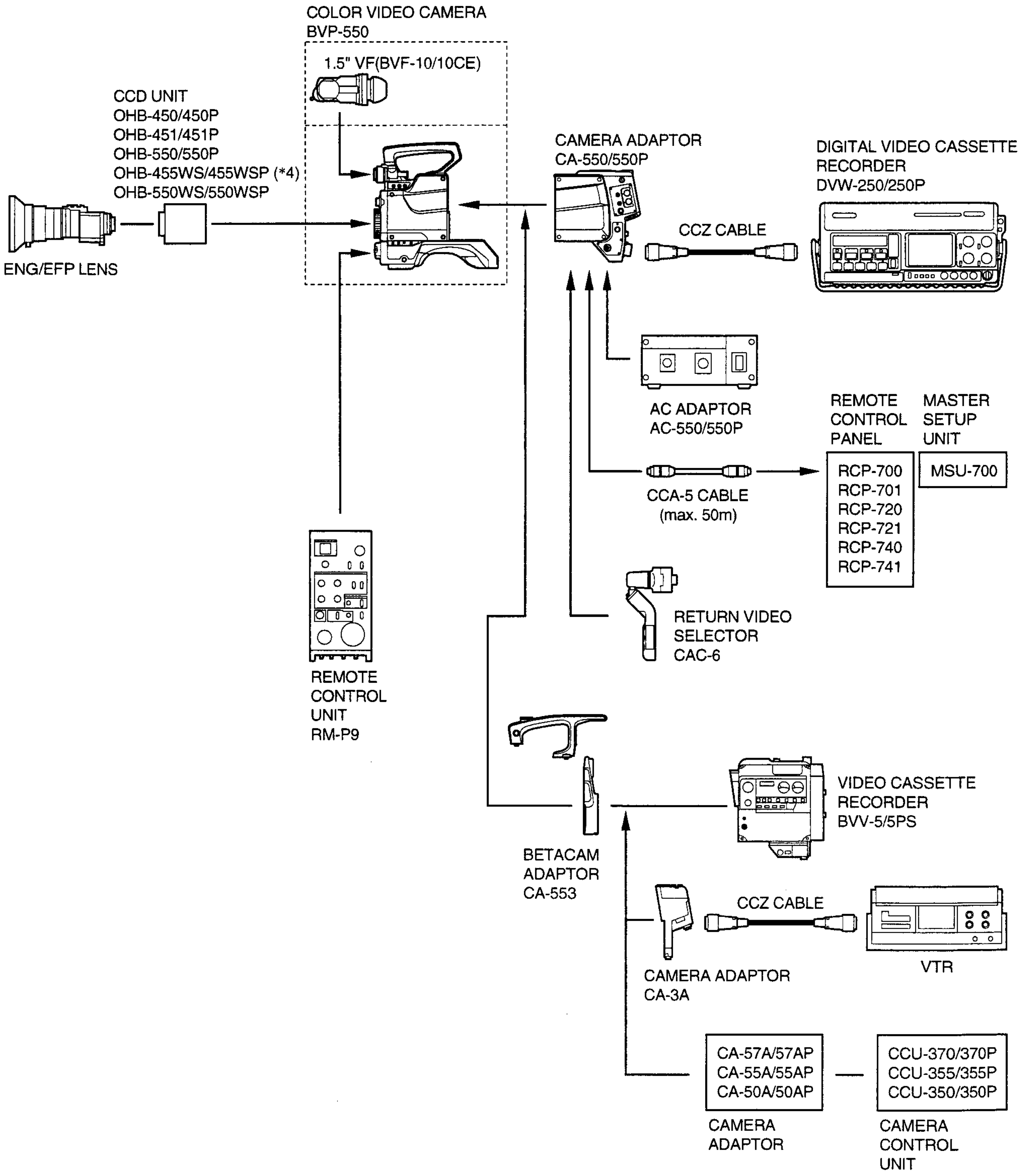
*2 : TRIAX ケーブル長

直径	延長可能な長さ
8.5 mm	1000 m
14.5 mm	2000 m

*3 : BVP-550 と CCU-550 を接続するときは，カメラ側の IC36/AT-95 基板の ROM が Ver. 1.14 以降であることを確認してください。

*4 : OHB-405WS, OHB-455WS を BVP-500, BVP-550 に組みこんで使用するときには，カメラ側の IC36/AT-95 基板の ROM が Ver. 2.01 以降であることを確認してください。

1-4. システム接続例


COLOR VIDEO CAMERA
BVP-550
1.5" VF(BVF-10/10CE)
CCD UNIT
OHB-450/450P
OHB-451/451P
OHB-550/550P
OHB-455WS/455WSP (*4)
OHB-550WS/550WSP
ENG/EFP LENS
CAMERA ADAPTOR
CA-550/550P
DIGITAL VIDEO CASSETTE
RECORDER
DVW-250/250P
CCZ CABLE
AC ADAPTOR
AC-550/550P
REMOTE
CONTROL
PANEL
MASTER
SETUP
UNIT
RCP-700
RCP-701
RCP-720
RCP-721
RCP-740
RCP-741
MSU-700
CCA-5 CABLE
(max. 50m)
RETURN VIDEO
SELECTOR
CAC-6
REMOTE
CONTROL
UNIT
RM-P9
VIDEO CASSETTE
RECORDER
BVV-5/5PS
BETACAM
ADAPTOR
CA-553
CCZ CABLE
CAMERA ADAPTOR
CA-3A
VTR
CA-57A/57AP
CA-55A/55AP
CA-50A/50AP
CAMERA
ADAPTOR
CCU-370/370P
CCU-355/355P
CCU-350/350P
CAMERA
CONTROL
UNIT

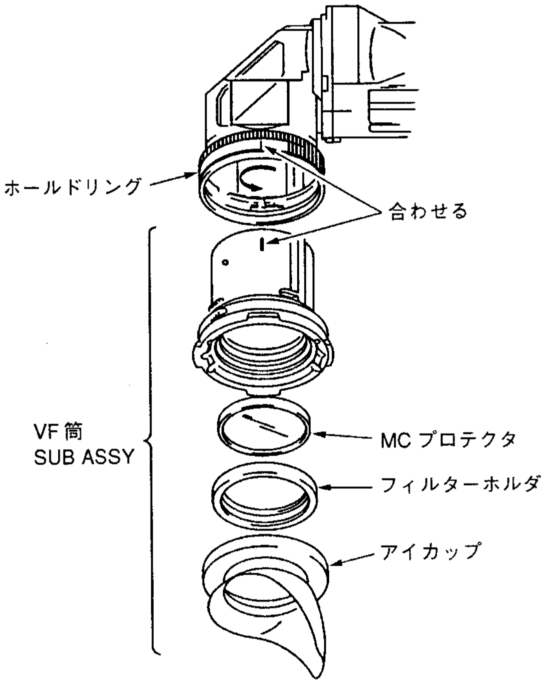
1-5. ビューファインダ用アクセサリ

別売アクセサリとして下記のパーツが用意されています。
必要に応じてお求めください。

- VF回転収納機構：BKW-401
  BKW-401を取付けるとビューファインダを垂直位置まで回転させることができる。これにより本機のグリップを持って移動する際，ビューファインダが脚に当たらず速やかに移動できる。

- 防曇フィルタ（ソニー部品番号1-547-341-11）
  MCプロテクタの代わりに使用する。（イラスト参照）

- 老視用接眼レンズ（ソニー部品番号A-8262-537-A）
- 低倍率レンズ（ソニー部品番号A-8262-538-A）
- 色収差改善ルーペ（ソニー部品番号A-8267-737-A）
- 高性能3倍ルーペ（ソニー部品番号A-8314-798-A）
  VF筒SUB ASSYの形態で交換する。（イラスト参照）



※フィルターホルダへのMCプロテクタのはめ込みおよびアイカップの取り付けは防滴性を損なわないよう確実に行うこと。

第2章
サービスインフォメーション

2-1. サービス上の注意事項

2-1-1. 基板内部品交換時の注意

PR-211およびCN-1142基板にマウントされている電気部品等は交換できません。また、CN-1120/1121基板の68P I/Fコネクタも交換できません。部品不良の際は基板ごと交換してください。
また，PR-211基板上のCN-1142基板は，OHB-550WSのPR-212基板を取り付けないときに使用する終端基板です。PR-212基板を使用しない時は，必ずCN-1142基板をPR-211基板に取り付けてください。

2-1-2. EEPROMデータの内容

各基板上のEEPROMの保持データの内容を以下に示す。

基板	Ref.番号	データの内容
VA-163	IC26	VA-163基板調整データ
AT-95	IC46	トリミング／リファレンスファイル
SG-234	IC21	SG-234基板調整データ
DA-88	IC10	DA-88基板調整データ
IF-510	IC155	IF-510基板調整データ
MB-602	IC5	機種名，シリアルNo.

注意

各基板上のEEPROMは基板固有のデータが書き込まれているため，交換は行わないでください。なお，「5章 Spare Parts」に記載されている上記ICの部品番号は，データが書き込まれていない部品です。詳しくはソニーのサービス窓口にご相談ください。

2-1-3. 延長基板

各プラグイン基板のチェック，調整を行うために下記の延長基板が別売で用意されています。

延長基板	ソニー部品番号	基板
EX-464	J-6395-040-A	VA-163 AT-95 SG-234 DA-88 IF-510 CA側のプラグイン基板

2-1-4. 補修部品注意事項

1. **⚠警告** **安全重要部品**
   ⚠印のついた部品は安全性を維持するために重要な部品です。したがって、交換する時は必ず指定の部品を使ってください。

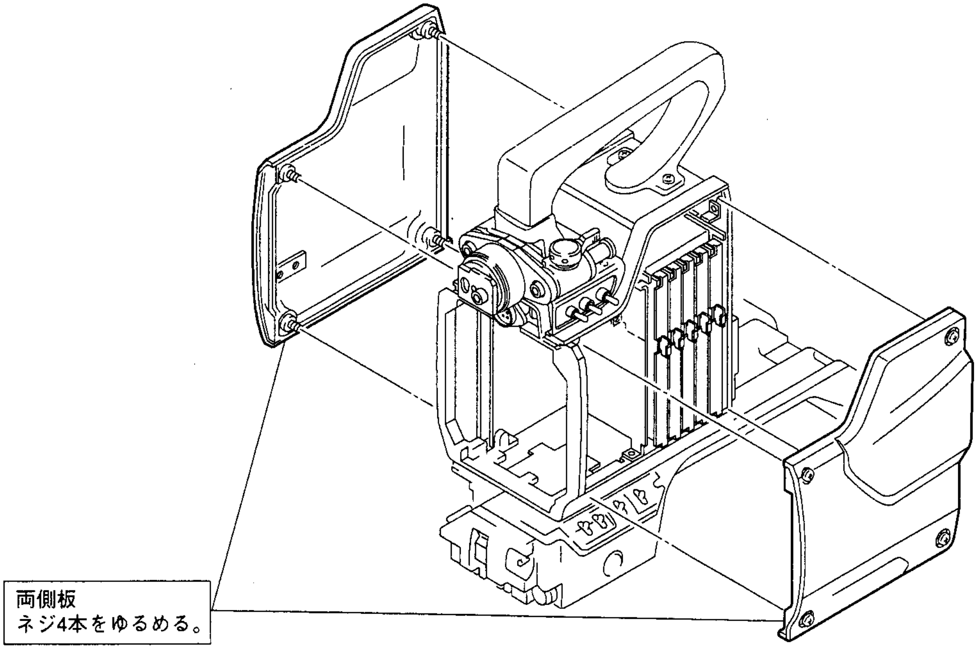
2. **部品の共通化**
   ソニーから供給する補修用部品は、セットに使われているものと異なることがあります。
   これは部品の共通化、改良等によるものです。
   部品表には現時点での共通化された補修用部品が記載されています。

3. **部品の在庫**
   部品表のSP (Supply code) 欄に“o”で示される部品は在庫していないことがあり、納期が長くなることがあります。

4. **単位の表記**
   下記の単位については、表記を変更または省略しています。

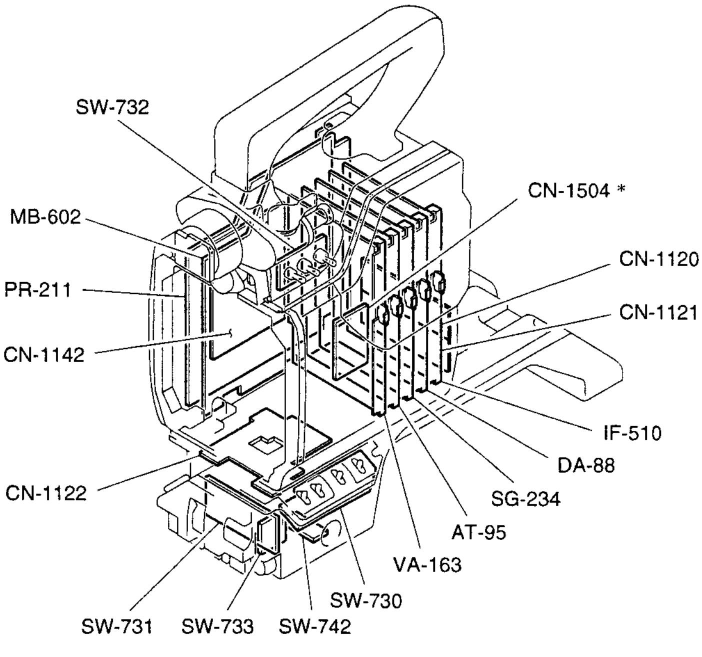
単位		表記
静電容量	μF	uF
インダクタンス	μH	uH
抵抗値	Ω	省略

2-2. 外装の外しかた



両側板
ネジ4本をゆるめる。

2-3. 基板配置図


SW-732
MB-602
PR-211
CN-1142
CN-1122
CN-1504 *
CN-1120
CN-1121
IF-510
DA-88
SG-234
AT-95
VA-163
SW-730
SW-731
SW-733
SW-742

* シリアルNo. 16371番以降

2-4. 回路概説

BVP-550 (以下，BVPと呼ぶ) および別売のCCDブロックOHB-450/451/550/550W (以下，OHB) の回路概説について以下に示す。

(1) CCD駆動部 OHB (別売)

TG-159基板

TG-159基板は，CCDを駆動するためのパルスをDR-271基板へ，CCD出力をサンプリングするためのパルスをPA-181基板へ出力している。駆動パルスはBVPから入力されるHD，VDパルスに同期して出力される。各パルスは基板上のVCOクロック (36 MHz) から作られており，デジタル回路用のクロック (36 MHz, 18 MHz) もBVPに出力される。また，基板上のEEPROMにCCDのV-sub電圧やホワイトシェーディングのデータなどが記録されている。

DR-271基板

DR-271基板は，TG-159基板からのパルスでCCDを直接駆動できるように変換している。変換されたパルスはBI-91 (R) /91 (G) /91 (B) の各基板を通ってCCDに伝えられる。また，V-sub電圧用に+15Vから+29 Vを作る回路や光学フィルタとのインタフェース回路がある。

BI-91 (R) /91 (G) /91 (B) 基板

BI-91 (R) /91 (G) /91 (B) 基板にはCCDがマウントされていて，駆動パルスや制御電圧をCCDに加えている。CCDから出力される信号はソースフォロアを通しPA-181基板に出力される。

PA-181基板

PA-181基板は，BI-91 (R) /91 (G) /91 (B) 基板より出力されたCCD出力から相関二重サンプリングによって映像信号を取り出し，さらにG/R信号は1倍，B信号は3倍に増幅してBVPのVA-163基板に出力している。

DR-302基板 (OHB-451のみ)

OHB-451の1枚フィルターディスク駆動用基板。MSUまたはRCP側からの指定に対応して、光学フィルタをモータを使って駆動する。設定フィルタ検出回路とフィルター位置電圧発生回路とで構成されるサーボ回路と、モータ駆動回路から成り立っている。

(2) ビデオ信号系

VA-163基板

VA-163基板では，OHBから出力されるビデオ信号を増幅し，次のような処理を行う。

- ブラックシェーディング補正
- ゲインアップコントロール
- ブランキングクリーニング
- ホワイトシェーディング補正
- フィードバッククランプ
- ホワイトバランス
- フレア補正
- プリニー

その他，映像信号とTEST SAW (TEST 1) 信号，3-STEP TEST (TEST 2) 信号の切り換えも行っている。

PR-211基板

PR-211基板では，まずアナログR/G/Bビデオ信号をサンプル/ホールド付きA/Dコンバータでデジタル信号に変換している。OHBから送られてくるクロックを用い，A/D変換，デジタルプロセス回路に必要なクロックを合成している。A/D変換されたデジタルR/G/B信号にリニアマトリクス信号，ディテール信号を付加し，さらにペデスタルコントロール，ガンマ補正，ニー補正，ホワイトクリップ等の処理を行う。それ以外にも下記のような処理を行っている。

- 内蔵カラーバーの発生と，本線／カラーバー信号の切り換え
- デジタルR/G信号を用いたディテールおよびアパーチャー信号の生成
- スキントーン信号の生成
- オートホワイト／オートブラックバランス，オートアイリス，フレア補償，DCCを行うための信号検出
- ホワイト／ブラックシェーディングの検出とその補正波形の発生，およびVA-163基板への出力
- 黒レベルの検出と，フィードバッククランプ電圧をVA-163基板へ出力
- TEST SAW波形の発生，およびVA-163基板への出力

上記のようにデジタル処理されたビデオ信号は，Y, R-Y, B-Y信号に変換されDA-88基板に出力されると同時に，MB-602基板経由でカメラのデジタルビデオ出力となる。また，PR-211基板のデジタルカラーエンコーダICにてさらにY，R-Y，B-Y信号からY/C信号を合成する。それに36 MHzレート，10 bit D/A変換を行い，VF用白黒信号，広帯域輝度信号，変調色信号としてDA-88基板に出力する。VF用白黒信号には，レベル表示用ゼブラ信号，キャラクタ信号，センターマーカ等が付加される。

DA-88基板

PR-211基板から送られたVF用白黒（VF Y）信号は，ローパスフィルタを通りMB-602基板に出力される。また，広帯域輝度信号（Hi-Ys）はローパスフィルタを通り，IF-510基板に出力され，変調色信号（C）は黒クランプ回路とローパスフィルタを通り，Hi-Ysと加算され，VBS信号としてIF-510基板に出力される。PR-211基板よりデジタルビデオ信号として入力したY, R-Y, B-Y信号は，それぞれ他系統のビデオ信号との位相合わせをデジタルディレーラインで行ったのちD/A変換され，ローパスフィルタ，黒クランプ回路を通ってIF-510基板に出力される。その一方，上記Hi-Ys信号とR-Y, B-Y信号の組み合わせにより，アナログコンポーネント信号を発生する。アナログコンポーネント信号は，カメラに接続される機器（VTR, またはCCU）に応じて，レベル調整や基準信号の付加をAT-95基板より制御され，68P I/Fコネクタを経由して外部機器へ出力される。

IF-510基板

IF-510基板の入力信号としては，次のものが挙げられる。

DA-88基板からの入力信号：VF Y, VBS, Y, R-Y, B-Y

カメラ外部からの入力信号：外部同期用基準信号，リターンビデオ信号

これらの組み合わせによりIF-510基板では以下の出力ビデオ信号の系統が用意されている。

- VBS OUT信号
  入力VBS信号をバッファアンプを経てそのままカメラ外部へ出力する。
- RM用VBS OUT信号
  リモートコントロールユニットRM-P9のインターフェイスコネクタに出力される。設定メニューにてメニュー設定確認用キャラクタ信号をミックスできる。
- TEST OUT信号
  上記のVBS OUT信号のほか，VF Y信号が右側上部の信号切り換えスイッチにより選択され，TEST OUTコネクタより出力される。
- VF OUT/MONI OUT信号
  VF OUTとMONI OUTには同じ信号が出力される。VF Y, VBS, IF-510基板上のS1により選択されたリターンビデオ／基準信号のいずれかが選択され，さらにセンターマーカ，セーフティゾーンパルス等がミックスされて出力される。
  VF OUT信号は，VFコネクタへ，MONI OUT信号は68P I/Fコネクタへ出力される。
- R/G/B出力信号
  Y, R-Y, B-Y信号よりマトリクス回路にてR, G, B信号に変換され，68P I/Fコネクタへ出力される。
- VF用Y/R-Y/B-Y出力信号
  カラービュファインダ用の信号で，上記Y, R-Y, B-Y信号にキャラクタ信号やSKIN GATE信号がミックスされ，VFコネクタへ出力される。

上記の他，下記の機能も備えている。

- HD/VD外部同期回路
  リターンビデオや基準信号をVFに表示する際，カーソル信号をこれらの信号と同期させる必要がある。そのため，これらの信号から同期信号を分離して外部HD/VD信号を生成し，PR-211基板のカーソル信号発生回路へ供給する。
- G信号をピーク検出してAT-95基板に出力する。
- DA-88基板より入力されるSKIN GATE信号を68P I/Fコネクタ経由してCCUへ伝送する。

(3) オート系

AT-95基板

AT-95基板は，マイクロコンピュータを中心とした回路構成で，ROMに記憶されている命令に従ってカメラ部の各種コントロールを行う。主な動作を次に挙げる。

- ファンクションスイッチの命令，ビデオ信号系の検出データおよびアナログデータ等の解析
- 各種の制御信号／補正信号を各基板に出力
- ステータス情報や自己診断情報をキャラクタージェネレータから文字データとして出力
- リモートコントロールユニットRM-P9やカメラコントロールユニットCCU-700とのコントロールデータのやりとりを行うインターフェース機能

(4) パルス系

SG-234基板

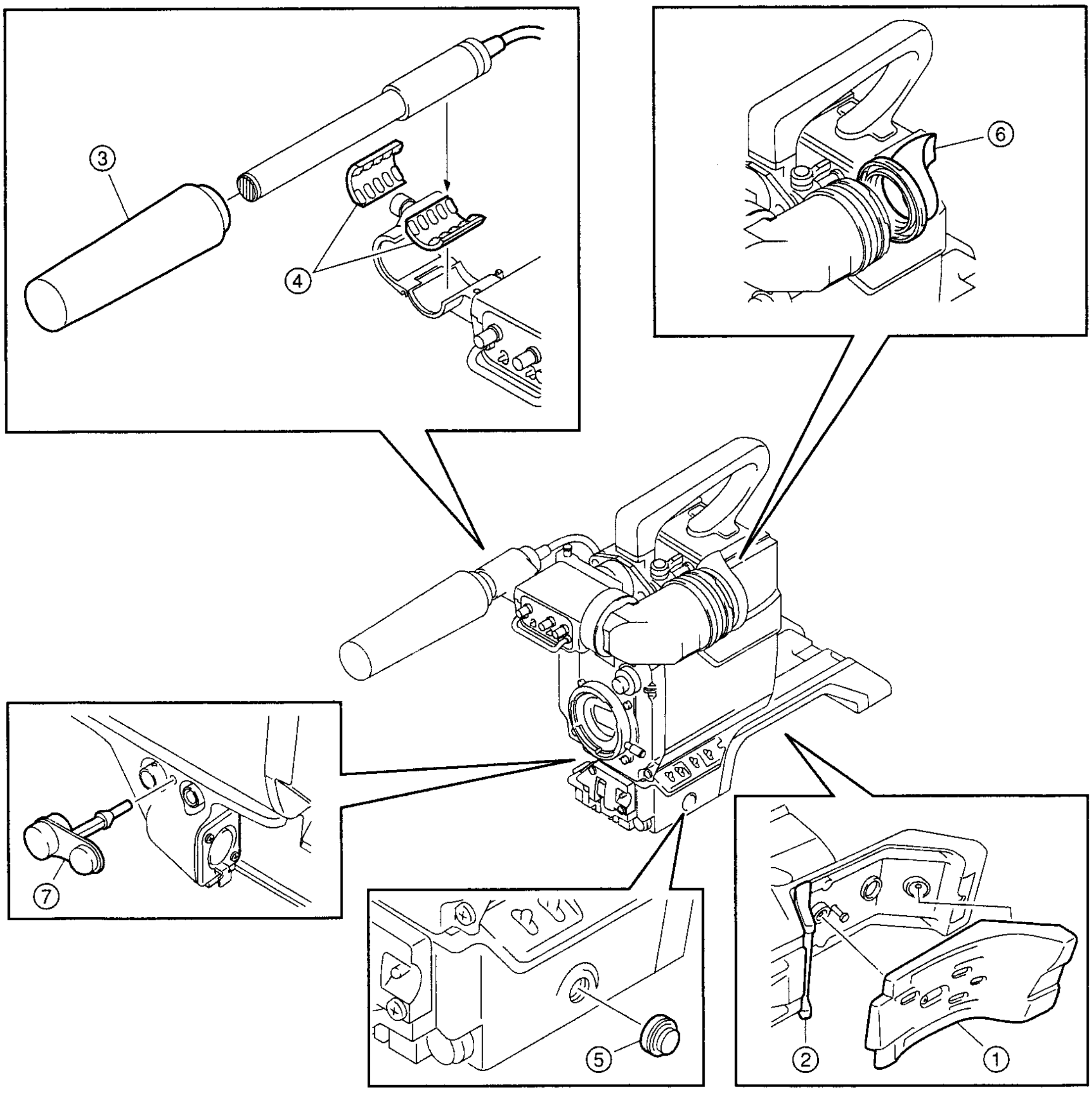
SG-234基板ではOHBからPR-211基板を経由して入力されるクロックパルスを基準にしてカメラ用各種同期信号を発生させ，カメラ内部の基板やOHB，およびカメラアダプター（CA）へ出力する。

また，この同期信号発生器は，外部同期用基準信号入力に同期結合する機能を備えていて，そのモードには単体使用時のVBS入力モード，およびCCU接続使用時のV RESET/H CONT入力モードがある。V RESET, H CONT信号は接続されるCAの種類により，その入力経路が異なる。

2-5. 定期交換部品

本機の定期交換部品を以下に示します。これらは経時変化によりひびや割れを生ずることがありますので，時々確認し，必要に応じて交換してください。

No.	部品名称	ソニー部品番号	備考
①	PAD ASSY (LARGE)	A-8278-237-A	
②	PAD ASSY (SMALL)	A-8278-238-A	
③	WIND SCREEN	3-708-875-0X	ビューファインダに付属
④	MIC CUSHION, RUBBER	3-692-138-0X	ビューファインダに付属
⑤	COVER, SW	3-676-244-1X	
⑥	EYE CUP	3-723-079-0X	ビューファインダに付属
⑦	CAP, CONNECTOR	3-692-644-0X	



2-6. クリーニング

2-6-1. ビューファインダ（別売）のクリーニング

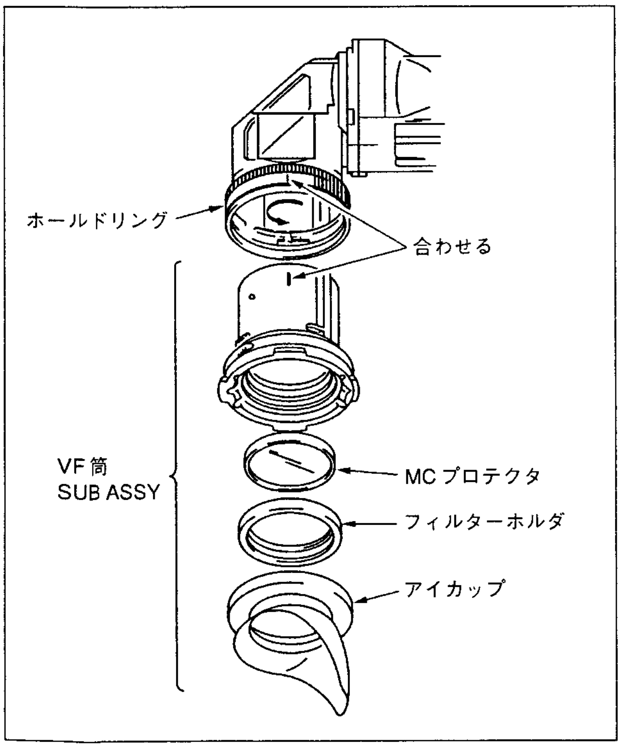
VF筒SUB ASSYを外すことにより，レンズやMCプロテクタのクリーニングが容易にできます。また，VF筒内部にほこりが付着した場合にも容易に除去できます。

手順

1. ホールドリングを左に回し，VF筒SUB ASSYを抜き取る。
2. アイカップを外す。
3. MCプロテクタをフィルタホルダごと外す。
4. レンズ，MCプロテクタを市販のレンズクリーナで拭く。
5. クリーニング終了後，逆の手順で取付ける。VF筒SUB ASSYをVF筒に取付けるとき，図のように線を合わせて差し込み，ホールドリングを右に回してロックする。

注意

- クリーニング液としてシンナー等の溶剤は使用しないこと。
- 防滴とMCプロテクタの落下防止のためアイカップは必ず取付けること。
- フィルタホルダへのMCプロテクタのはめ込み，およびアイカップの取付けは防滴性を損なわないように確実に行うこと。



2-6-2. 特殊環境使用後のアフターケア

海辺やほこりの多い地域，温泉地などの取材から帰ってきたときには，次に示す項目をチェックすることを推奨します。

1. セットの中に入っている砂やほこりをエアーブラシ等で慎重に取り除く。
2. 海水中の塩分や温泉中の硫黄分が外装の非塗装面に付着すると，白く腐食することがある。付着した場合はアルコール等で速やかにクリーニングすること。
3. コネクタの接続面をクリーニングする。
4. 一般動作チェックを行い，セットからの異音，異常動作のないことを確認する。

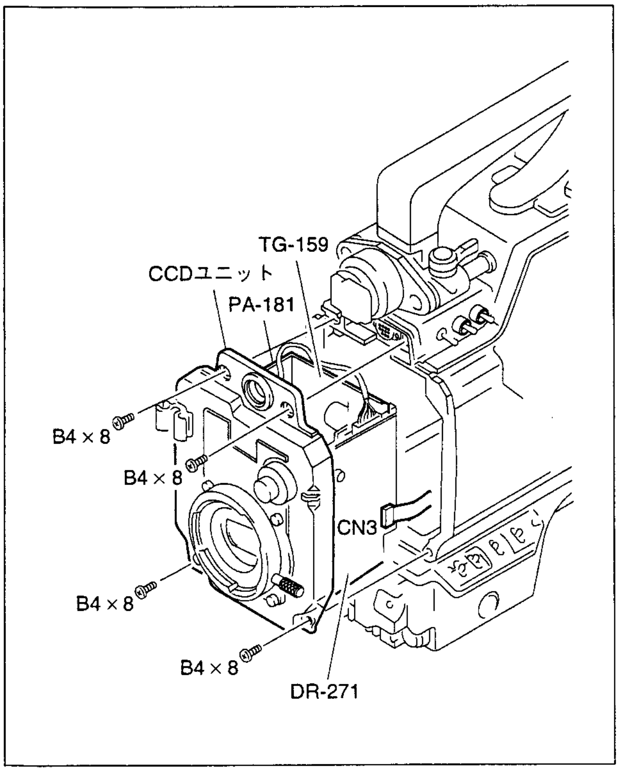
2-7. コネクタの交換方法

2-7-1. VFコネクタ

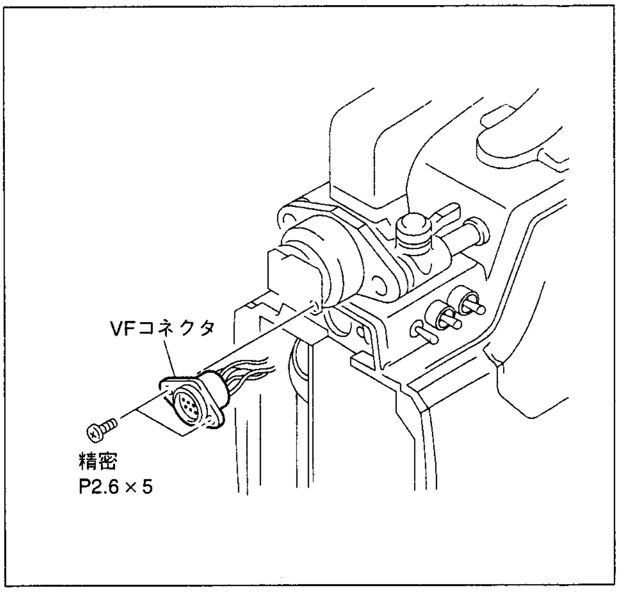
1. ネジ4本を外し，CCDユニットを引き出す。
2. DR-271基板のCN3，TG-159基板のCN3とPA-181基板のCN2のコネクタを外す。

   注意

   コネクタを外すときには，「2-8. フレキシブルカード電線の取り外し／取り付け」を参照。


TG-159
CCDユニット
PA-181
B4 × 8
B4 × 8
CN3
B4 × 8
B4 × 8
DR-271

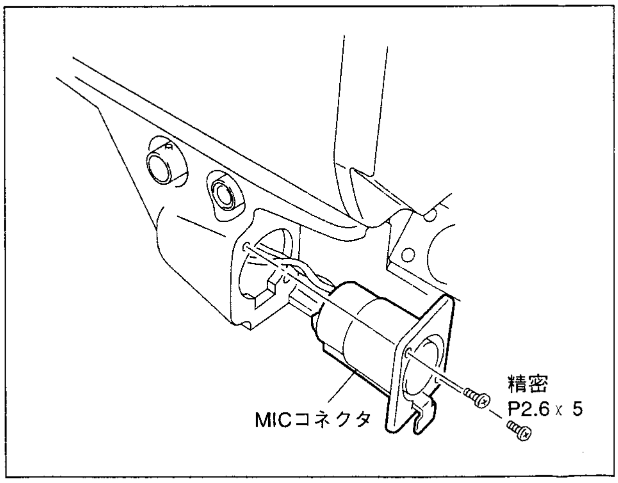
3. ネジ2本を外し，VFコネクタを外す。
   VFコネクタのはんだを外す。


VFコネクタ
精密
P2.6 × 5

4. 取り付けは取り外しと逆の手順で行う。

2-7-2. MICコネクタ

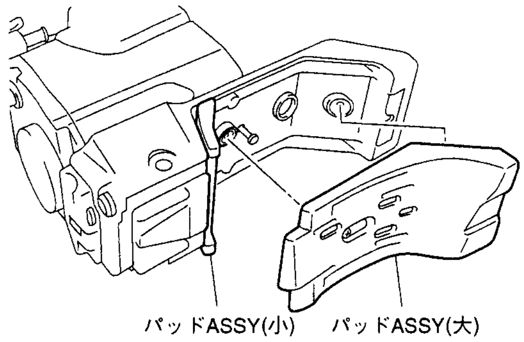
1. ネジ2本を外し，MICコネクタを外す。
   MICコネクタのはんだを外す。


精密
P2.6 x 5
MICコネクタ

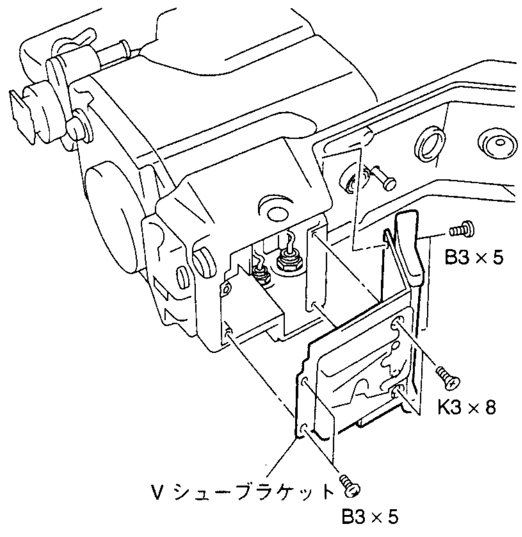
2. 取り付けは取り外しと逆の手順で行う。

2-7-3. TEST OUT/REMOTE コネクタ

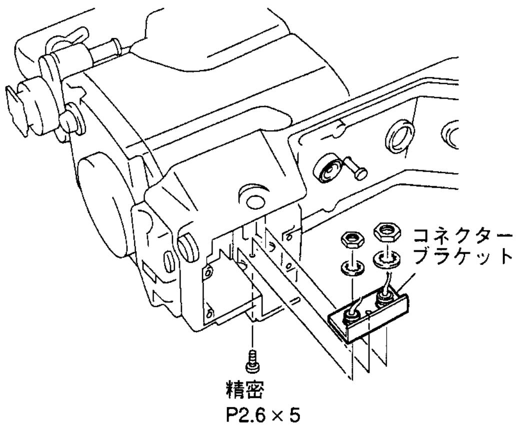
1. カメラ本体底部のネジ3本をゆるめ，パッドAssy（大）を外す。


パッドASSY(小)
パッドASSY(大)

2. ネジ7本を外し，Vシューブラケットを外す。


B3 × 5
K3 × 8
V シューブラケット
B3 × 5

3. ネジを外し，コネクターブラケットを外す。
TEST OUTコネクタ，REMOTEコネクタのはんだを外す。
各ナットを外し，TEST OUTコネクタ，REMOTEコネクタを外す。


コネクター
ブラケット
精密
P2.6 × 5

4. 取り付けは取り外しと逆の手順で行う。

2-8. フレキシブルカード電線の取り外し／取り付け

MB-602基板とCCDユニット，MB-602基板とCN-1120/1121/1122/PR-211基板との間にフレキシブルカード電線が使用されています。折りは著しく寿命を短くするので，取扱いには注意してください。

取り外し

1. 電源をOFFにする。

Aタイプ (MB-602基板とCCDユニット間)

2. A部を矢印方向に上げ，フレキシブルカード電線を引き抜く。

Bタイプ (MB-602基板とCN-1120/1121/1122/PR-211基板間)

2. B部を矢印方向にスライドしてロックを解除し，フレキシブルカード電線を引き抜く。

取り付け

注意

- フレキシブルカード電線を斜めに挿入しないこと。
- フレキシブルカード電線の接点面に汚れ，ゴミ等がないことを確認する。

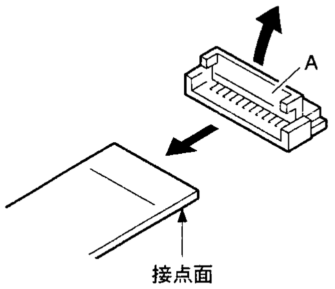
Aタイプ

1. A部を矢印方向に上げ，フレキシブルカード電線の接点面を下側にし，コネクタにしっかり挿入する。
2. A部を下げ，コネクタをロックする。

Bタイプ

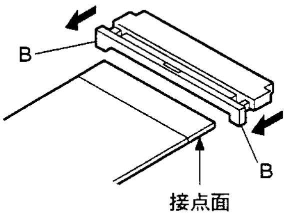
1. B部を矢印方向にスライドしてロックを解除し，フレキシブルカード電線の接点面を下側にし，コネクタにしっかり挿入する。
2. B部を戻して，コネクタをロックする。

Aタイプ



MB-602とOHB

Bタイプ



MB-602とCN-1120/1121/1122/PR-211

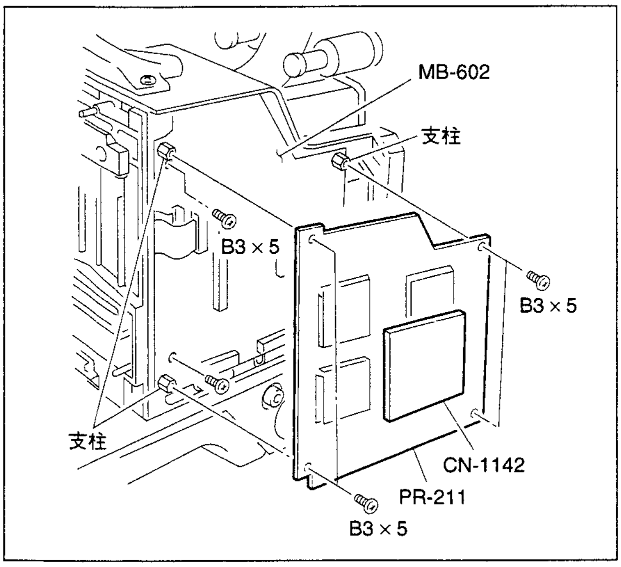
2-9. 基板の交換方法

2-9-1. MB-602 基板の交換

1. 両側板を外す。(「2-2. 外装の外し方」を参照)
2. プラグイン基板5枚を引き抜く。
3. ネジ4本を外し，PR-211 基板を外す。
4. コネクタを外す。

   注意

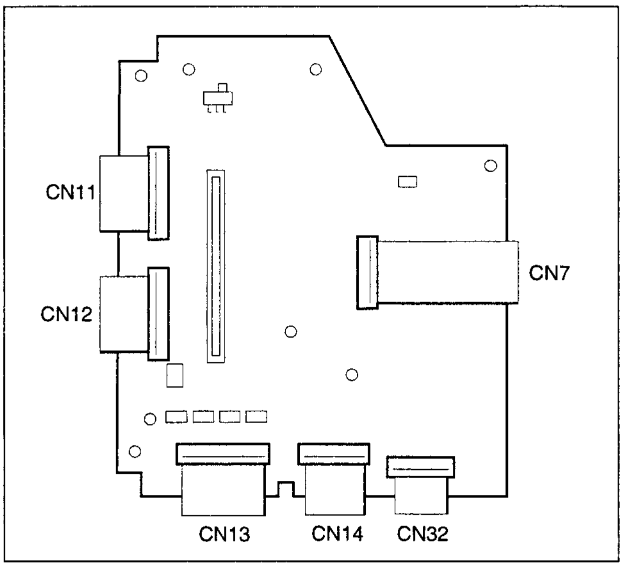
   フレキシブルカード電線を外すときは，「2-8. フレキシブルカード電線の取り外し／取り付け」を参照。
5. ネジ4本と六角支柱4本を外し，MB-602 基板を外す。


MB-602
支柱
B3 × 5
B3 × 5
支柱
CN-1142
PR-211
B3 × 5

6. コネクタを外す。

   注意

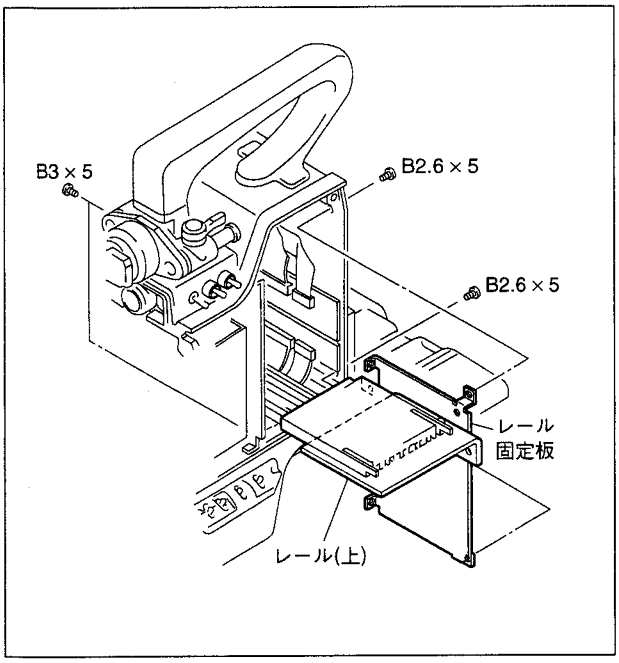
   フレキシブルカード電線を外すときは，「2-8. フレキシブルカード電線の取り外し／取り付け」を参照。


CN11
CN12
CN7
CN13
CN14
CN32

7. 取り付けは取り外しと逆の手順で行う。

2-9-2. CN-1120/CN1121 基板の交換

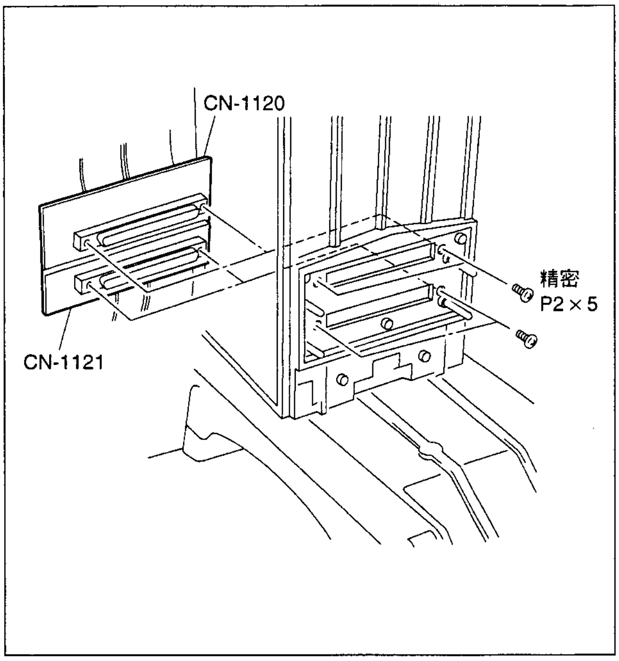
1. 右側板を外す。(「2-2. 外装の外し方」を参照)
2. プラグイン基板5枚とシールド板4枚を引き抜く。
3. DC-DCコンバータを外す。(「2-11. DC-DCコンバータユニットの交換」を参照)
4. レール（上）を外す。
5. ネジ4本を外し，レール固定板を外す。


B3 × 5
B2.6 × 5
B2.6 × 5
レール
固定板
レール(上)

6. ネジ各2本を外し，CN-1120/CN-1121 基板を外す。
7. コネクタを外す。

注意

フレキシブルカード電線を外すときは，「2-8. フレキシブルカード電線の取り外し／取り付け」を参照。

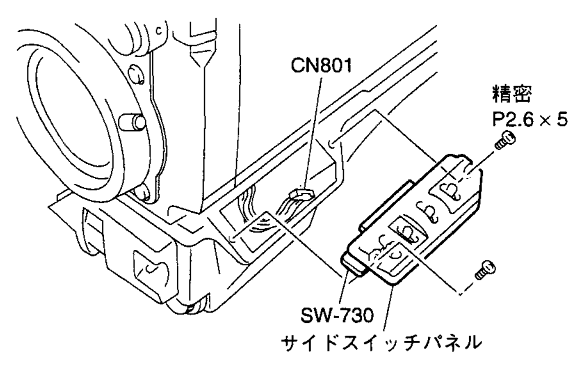

CN-1120
精密
P2 × 5
CN-1121

8. 取り付けは取り外しと逆の手順で行う。

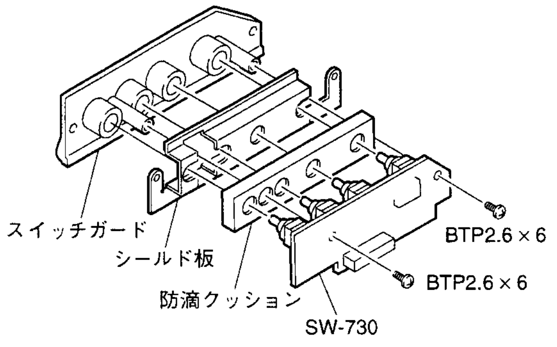
2-10. ファンクションスイッチの交換方法

2-10-1.サイドスイッチパネル部

1. ネジ2本を外し，サイドスイッチパネルを外す。
2. SW-730基板のコネクタ CN801を外す。


CN801
精密
P2.6 × 5
SW-730
サイドスイッチパネル

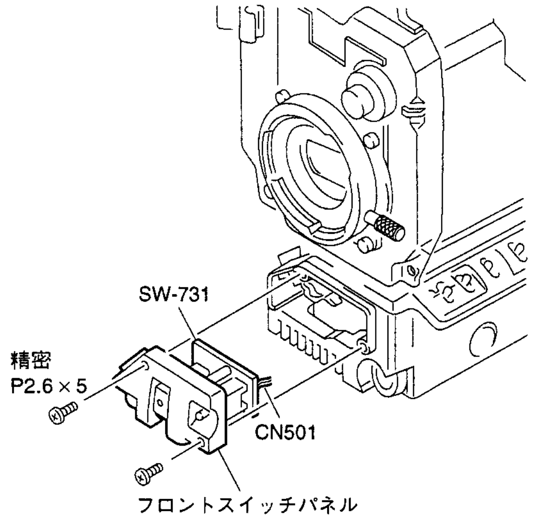
3. ネジ2本を外し，SW-730基板とシールド板と防滴クッションを取り外す。
4. 交換するスイッチのはんだを取り除き，スイッチを外す。


スイッチガード
シールド板
防滴クッション
SW-730
BTP2.6 × 6
BTP2.6 × 6

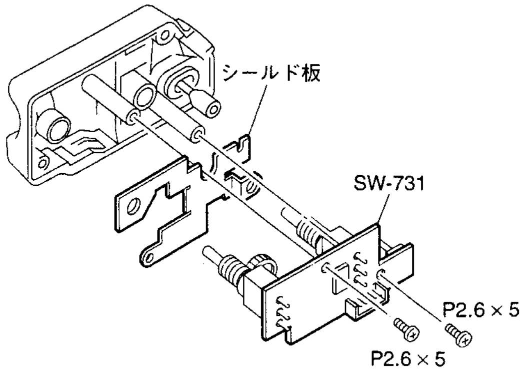
5. 取り付けは取り外しと逆の手順で行う。

2-10-2.フロントスイッチパネル部

1. ネジ2本を外し，フロントスイッチパネルを外す。
2. SW-731基板のコネクタ CN501を外す。


SW-731
精密
P2.6 × 5
CN501
フロントスイッチパネル

3. ネジ2本を外し，SW-731基板とツマミパッキン，VRツマミ，シールド板を取り外す。
4. 交換するスイッチのはんだを取り除き，スイッチを外す。


シールド板
SW-731
P2.6 × 5
P2.6 × 5

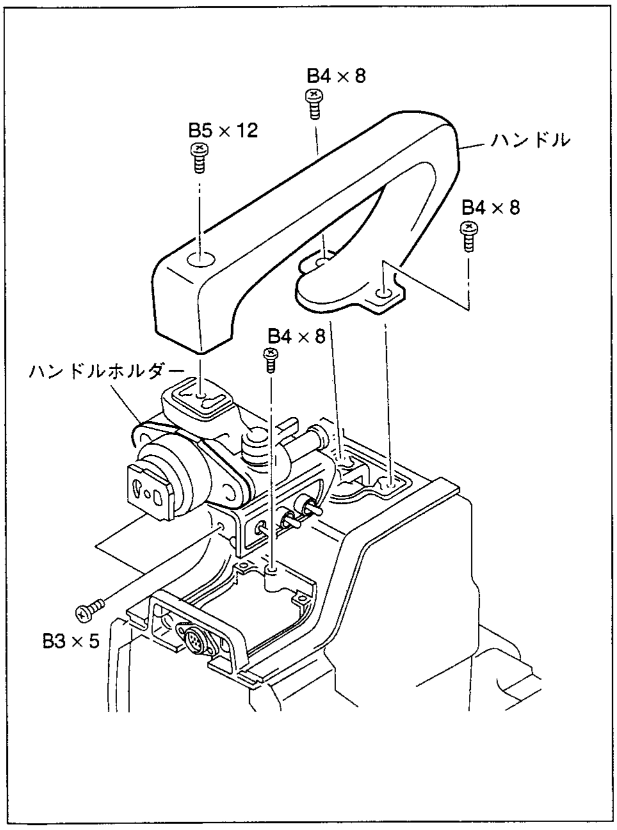
5. 取り付けは取り外しと逆の手順で行う。

2-10-3.VF DISPスイッチ

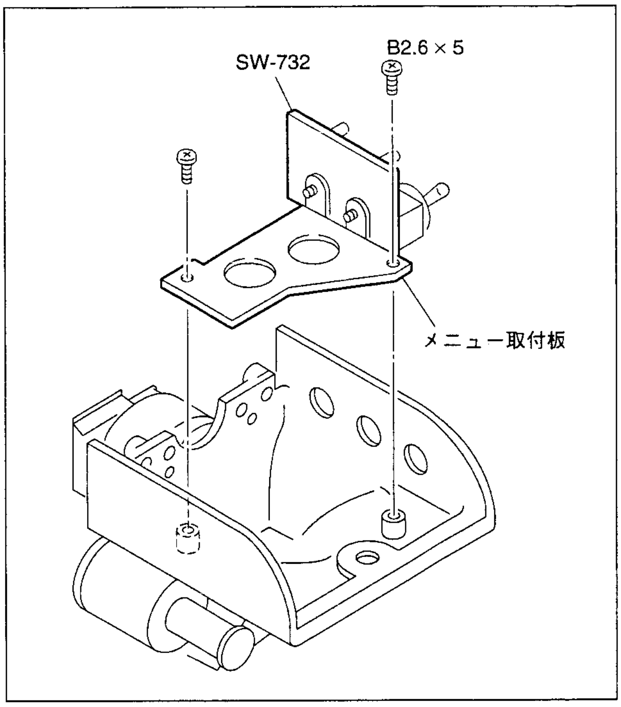
1. ネジ4本を外し，CCDユニットを引き出す。
2. DR-271基板のCN3, TG-159基板のCN3とPA-181基板のCN2のコネクタを外す。

   注意

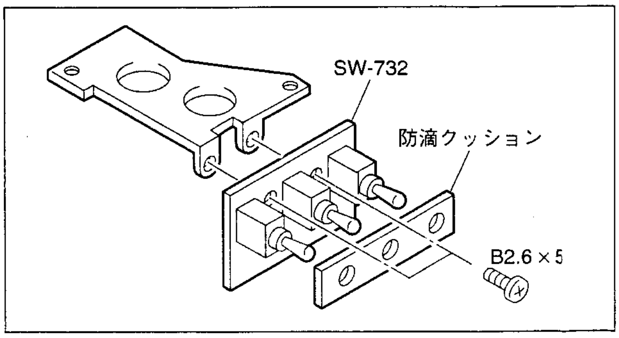
   コネクタを外すときには，「2-8. フレキシブルカード電線の取り外し／取り付け」および「2-7-1. VFコネクタ」を参照。
3. ネジ3本を外し，ハンドルを外す。
4. ネジ3本を外し，ハンドルホルダを外す。


B4 × 8
B5 × 12
ハンドル
B4 × 8
B4 × 8
ハンドルホルダー
B3 × 5

5. ネジ2本を外し，メニュー取付板を外す。


SW-732
B2.6 × 5
メニュー取付板

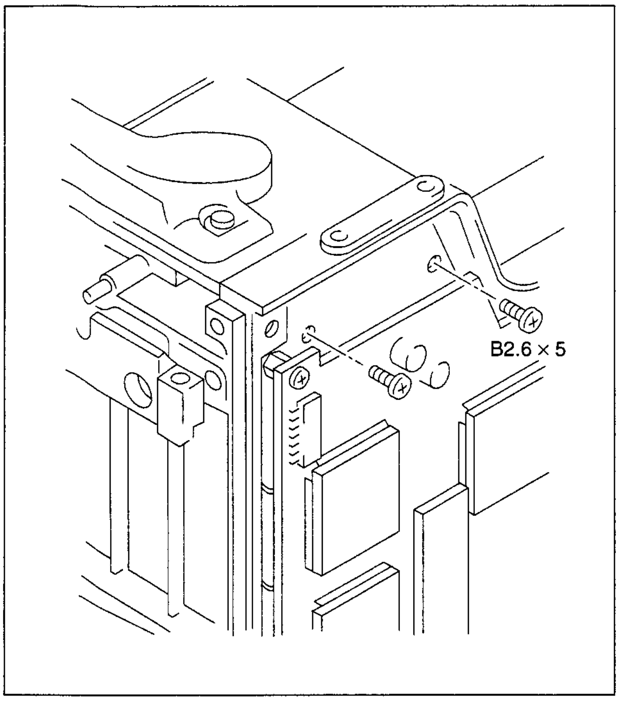
6. ネジ2本を外し，SW-732基板と防滴クッションを取り外す。
7. 交換するスイッチのはんだを取り除き，スイッチを外す。


SW-732
防滴クッション
B2.6 × 5

8. 取り付けは取り外しと逆の手順で行う。

2-11. DC-DC コンバータユニットの交換

1. 両側板を外す。(「2-2. 外装の外し方」を参照)
2. 本体左側の図に示すネジ2本を外す。

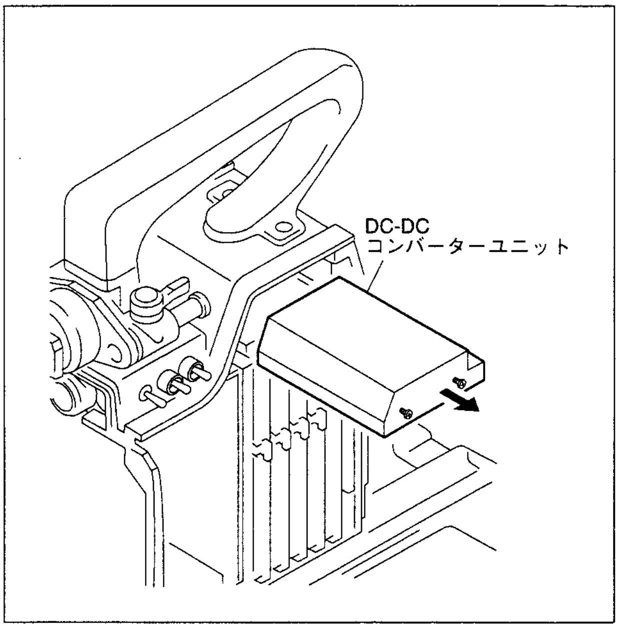


3. DC-DCコンバータユニットのねじ穴2ケ所に，ステップ2で外したネジ2本を3回転ねじ入む。

注意

ネジを3回転以上決してねじ込まないこと。

4. ネジ2本を両手でつかんでDC-DCコンバータユニットを引き出す。



5. 取り付け時は，新しいDC-DCコンバータユニットを手で押し込み，本体の左側から手順2で外したネジ2本で取り付ける。

第3章
設定メニュー

3-1. 設定メニュー

設定メニューは，各種設定値の選択やビューファインダ画面上に表示させる項目とその表示方法の選択および調整等に使用します。メニューはビューファインダ上に表示されます。また，メニュー内の設定を変えることにより，TEST OUTコネクタにビューファインダと同じ信号を出力することもできます。

• 設定メニューの構成

設定メニューは，以下のメニューで構成されています。
- Operation メニュー
- Paint メニュー
- Maintenance メニュー
- Reference メニュー
- Triming メニュー
- System config メニュー

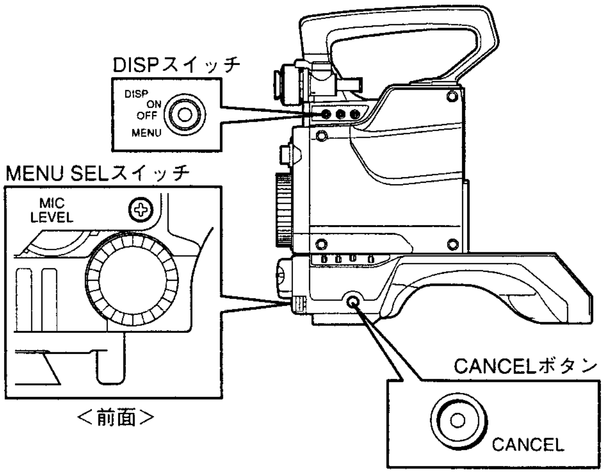
通常表示できるメニューは，「Operation」と「Paint」の2種類です。それ以外のメニューを表示したいときは，AT-95基板内のスイッチ設定が必要です。詳しくは，「1-3. 基板内スイッチの機能—AT-95基板」を参照してください。

• 必要機器

CCDユニット	OHB-450/550等
カメラアダプタ	CA-550等

カメラコントロールユニットCCU-700，ACアダプタAC-550またはVTR等を接続してカメラアダプタに電源を供給する。

• スイッチの説明


DISPスイッチ
DISP
ON
OFF
MENU
MENU SELスイッチ
MIC
LEVEL
＜前面＞
CANCELボタン
CANCEL

DISP スイッチ

ON　：ビューファインダ画面に本機の設定や動作の状態を示す文字やメッセージが表示される。
OFF　：ビューファインダ画面の表示が全て消える。
MENU：ビューファインダ画面に設定メニューが表示される。

MENU SEL スイッチ

ビューファインダ画面に表示されたメニュー項目の選択や設定値の変更を行う。

CANCEL ボタン

メニュー設定の内容を取り消したり，ページ選択モードやTOPメニューに戻る働きをする。

参考

メニュー項目の全体構成を示す画面としてTOPメニュー画面があります。TOPメニューを表示させるには，MENU SEL スイッチを押しながら DISP スイッチを OFF から MENU に切り換えます。

• 基本操作

1. メニューの表示
   Operation メニューを表示させるには，DISP スイッチを ON にする。
   それ以外のメニューを表示させるには，まず MENU SEL スイッチを押しながら DISP スイッチを OFF から MENU に切り換え，TOP メニュー画面を表示させる。MENU SEL スイッチを回して，表示させたいメニューを選択し，MENU SEL スイッチを押す。
2. ページを移行させたいときは，右上にスクロールバーが表示された状態でMENU SELスイッチを回す。（MENU SEL スイッチを押すと項目選択モードになりスクロールバーは消える。）
3. 項目を移行させたいときは，MENU SEL スイッチを回す。（MENU SEL スイッチを押すと確定する。）
4. 設定値を変更したいときは，MENU SEL スイッチを回す。（速く回すと数値がゆっくり変化し，ゆっくり回すと微調整ができる。）
   MENU SEL スイッチを押すと設定が確定する。
5. CANCEL ボタンを押すたびに画面は項目選択モード，ページ選択モードへと戻る。
6. メニュー表示を消したいときは，DISP スイッチを OFF にする。

• ROM バージョン

メニューの内容や工場出荷時設定はAT-95基板のROM（IC36）のバージョンによりマニュアルに記載の内容と異なることがあります。
本文表中の Ver. 欄に ROM のバージョンを記載しています。バージョンが記載されている場合，そのバージョン以降の ROM に対応して機能が追加，または変更されていることを示します。（特に記載のない項目は，その機能がすべてのバージョンで対応していることを示します。）
ROM のバージョンは次の手順で容易に確認できます。

1. DISP スイッチを OFF にする。
2. MENU SEL スイッチを押しながら，電源を ON にすると，ビューファインダ内に約3秒間バージョンが表示される。

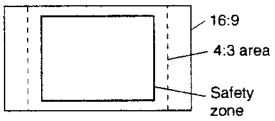
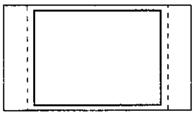
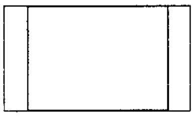
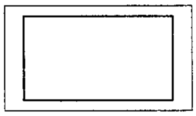
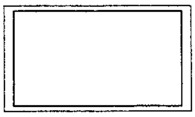
3-1-1. Operation メニュー

通常カメラの撮影担当者が本機を運用するとき，被写体の条件などによって設定を変更する項目です。

(設定欄の□囲みは，工場出荷設定です)

ページ	Ver.	設定項目	設定	内容
VF DISPLAY		ZOOM	$\boxed{\text{ON}}$, OFF	ズームポジションおよびエクステンダ表示の ON/OFF
		SHUTTER	$\boxed{\text{ON}}$, OFF	シャッタースピード / モード表示の ON/OFF
		IRIS	$\boxed{\text{ON}}$, OFF	絞り値表示の ON/OFF
		AUDIO	$\boxed{\text{ON}}$, OFF	オーディオレベル表示のON/OFF (CCU／RCP接続時強制OFF)
		TAPE	$\boxed{\text{ON}}$, OFF	テープ残量表示の ON/OFF (CCU／RCP 接続時強制 OFF)
		ZEBRA	ON , OFF	ゼブラ表示のON/OFF (接続されるVFのZEBRA SWに連動する)
		MESSAGE	$\boxed{\text{ON}}$, OFF	FILTER, WHITE, GAIN, DCC (AUTO KNEE) , SHUTTERの各設定変更時に VF 画面中央にメッセージを 3 秒間表示する機能の ON/OFF
		MODE	CHG , $\boxed{\text{USR}}$	CHG : FILTER, WHITE, GAIN の各設定が標準設定 (FILTER : 1B,WHITE : A,GAIN : 0dB) と異なる場合のみ表示 USR : 各項目の ON/OFF 設定に従う
		FILTER	* , $\boxed{\text{ON}}$, OFF	光学フィルターディスク表示の ON/OFF
		WHITE	* , $\boxed{\text{ON}}$, OFF	ホワイトバランスメモリ表示の ON/OFF
		GAIN	* , $\boxed{\text{ON}}$, OFF	ゲイン値表示の ON/OFF
MARKER		CENTER	$\boxed{\text{ON}}$, OFF	センターマーカー表示の ON/OFF
		SAFETY ZONE	80%, $\boxed{\text{90 \%}}$, OFF	セーフティゾーンマーカ表示の ON/OFF およびマーカ範囲の設定 [a]
		BOX CURSOR	ON, $\boxed{\text{OFF}}$	ボックスカーソル表示の ON/OFF
		BOX H POS	− 99 to 99 ($\boxed{0}$)	ボックスカーソル位置の設定 (水平方向)
		BOX V POS	− 99 to 99 ($\boxed{0}$)	ボックスカーソル位置の設定 (垂直方向)
		BOX WIDTH	00 to 99 ($\boxed{41}$)	ボックスカーソルの横幅の設定
		BOX HEIGHT	00 to 99 ($\boxed{10}$)	ボックスカーソルの上下幅の設定
GAIN SW		LOW	-3, $\boxed{0}$, 3, 6, 9, 12, 18, 24, 30 dB	GAIN SW のポジション LOW, MIDDLE, HIGH に対応するゲイン値の設定
		MID	-3, 0, 3, 6, $\boxed{9}$, 12, 18,24, 30dB	
		HIGH	-3, 0, 3, 6, 9, 12, $\boxed{18}$,24, 30dB	

a) 16 : 9 モード時，SAFETY ZONE および 4 : 3 SAFETY の組み合わせで下記のセーフティゾーンマーカが選択できます。

		SAFETY ZONE		
		80%	90%	OFF
4 : 3 SAFETY	ON			
	OFF			表示されない

ページ	Ver.	設定項目	設定	内容
WIDE SCREEN (OHB-550WS対応)		16:9/4:3 MODE	$\boxed{\text{16:9}}$, 4:3	カメラのビデオ信号出力のアスペクト比の設定 (単体使用時のみ)[b]
		VF ASPECT	$\boxed{\text{AUTO}}$, 4:3	VFの表示アスペクト比の設定 AUTO : 16:9/4:3 MODEの設定に従い，VFの表示アスペクト比を自動で切り換える 4:3 :16:9/4:3 MODEの設定にかかわらずVFの表示アスペクト比は4:3となる
		4:3 SAFETY	ON, $\boxed{\text{OFF}}$	16:9モード時，4:3エリアを示すセーフティゾーンに切り換える機能のON/OFF[a]
		16:9 ID ON VF	ON, $\boxed{\text{OFF}}$	16:9モード時，VF画面上に16:9の文字表示をする機能のON/OFF (DISPスイッチがONまたはOFFのときのみ有効)
		16:9 ID ON BARS	ON, $\boxed{\text{OFF}}$	16:9モード時，内蔵カラーバーに16:9の文字表示をする機能のON/OFF (DISPスイッチがONまたはOFFのときのみ有効)
MON OUT		BNC TEST OUT	$\boxed{\text{VBS}}$, RM, VF Y	TEST OUT端子から出力させるビデオ信号の種類を設定 VBS : カラー複合信号 RM : RM-P9に出力する信号と同じ信号を出力 VF Y : Y (モノクロ) 信号
		RM/MON CHAR	$\boxed{\text{ON}}$, OFF	RM-P9に出力するVBS信号にVF内表示している文字信号をミックスする機能のON/OFF (RM-P9から本メニューを操作する場合ONにすると便利)
		VBS LOCK	ON, $\boxed{\text{OFF}}$	ENC/RGB SWによる誤操作防止用 ON : ENC/RGB SWの設定にかかわらず，TEST OUT端子からENC信号が出力される。 OFF : ENC/RGB SWで選択された信号が出力される
		VF VIDEO MODE	$\boxed{\text{Y}}$, MIX, NAM	VFに表示する映像信号の種類を選択 Y : Y=0.3R+0.59G+0.11B；カメラ出力と同じ信号 MIX : Y=0.33R+0.33G+0.33B NAM : R, G, B信号のうち最大レベルのものが選択表示される
		[RGB] -G	ON, $\boxed{\text{OFF}}$	RGB SWで選択できる信号の設定 ON : R-G, B-G OFF : R, G, B
AUTO IRIS AUTO KNEE (DCC)		IRIS OVERRIDE	−99 to 99 ($\boxed{0}$)	オートアイリスレベルの基準値を設定 −99 (閉じぎみ) ↔ 99 (開けぎみ)
		IRIS OVERRIDE	ON, $\boxed{\text{OFF}}$	AUTO IRIS OVERRIDE機能のON/OFF
		APL RATIO	−99 to 99 ($\boxed{0}$)	オートアイリスの効きかたを設定 −99 (PEAK) ↔ 99 (AVERAGE)
		AUTO KNEE POINT	−99 to 99 ($\boxed{\text{XX}}$)	AUTO KNEEモード時の最小ニーポイントの設定
		AUTO KNEE SLOPE	−99 to 99 ($\boxed{\text{XX}}$)	AUTO KNEEモード時のニースロープの設定
STAND ALONE		H PHASE	−99 to 99 ($\boxed{\text{XX}}$)	外部同期モード時のカメラのH位相の設定
		SC PHASE	0 to 360 ($\boxed{\text{XX}}$)	外部同期モード時のカメラのサブキャリア位相の設定
		CABLE COMP	ON, $\boxed{\text{OFF}}$	外部同期モード時の同期信号に対するケーブル補償回路のON/OFF
		SNG BARS	ON, $\boxed{\text{OFF}}$	SNG用カラーバー信号のON/OFF
		MASTER BLACK	−99 to 99 ($\boxed{0}$)	MASTER BLACKレベルを調整
		IRIS OVERRIDE	ON, $\boxed{\text{OFF}}$	AUTO IRIS OVERRIDE機能のON/OFF
		CF PULSE	$\boxed{\text{ON}}$, OFF	VTRへ供給するカラーフレームパルス信号のON/OFF
		SKIN DETAIL	ON, $\boxed{\text{OFF}}$	スキントーンディテール機能のON/OFF
	1.10	AUTO HUE	MENU SELスイッチを押して実行	スキントーンディテール機能が効く範囲を自動設定する。 (VFのゲートマーカを被写体の肌色に合わせて測定)

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b) CCU接続時はCCU側の設定に連動し，このメニューでは変更できません。CCU接続時にアスペクト比の設定を変更したい場合はPaintメニューのOTHERSページを使用してください。このメニューで変更しようとするとメッセージ“Use Paint MNU”が表示されます。

ページ	Ver.	設定項目	設定	内容
AUTO SETUP		AUTO BLACK	MENU SEL スイッチを押して実行	ブラックバランス自動調整の開始 (実行中に MENU SEL スイッチを押すと処理を中止する)
		AUTO WHITE	MENU SEL スイッチを押して実行	ホワイトバランス自動調整の開始
		LEVEL AUTO	MENU SEL スイッチを押して実行	カメラ内部回路レベルの自動調整の開始 c) (実行中に MENU SEL スイッチを押すと処理を中止する)
		TEST	1, 2, $\boxed{\text{OFF}}$	テスト信号の選択 1 : のこぎり波のテスト信号を出力 2 : 3段波形のテスト信号を出力 OFF : テスト信号を出力しない
DIAGNOSIS		OHB	$\boxed{\text{OK}}$, NG	AT 基板の CPU と OHB ブロック間の制御データ通信状態を示す
		PR	$\boxed{\text{OK}}$, NG	AT 基板の CPU と PR 基板間の制御データの通信状態を示す
		VA	$\boxed{\text{OK}}$, NG	AT 基板の CPU と VA 基板間の制御データの通信状態を示す
		AT	$\boxed{\text{OK}}$, NG	AT 基板内の CPU とメモリ間の制御データの通信状態を示す
		SG	$\boxed{\text{OK}}$, NG	AT 基板の CPU と SG 基板間の制御データの通信状態を示す
		DA	$\boxed{\text{OK}}$, NG	AT 基板の CPU と DA 基板の制御データの通信状態を示す
		IF	$\boxed{\text{OK}}$, NG	AT 基板の CPU と IF 基板間の制御データの通信状態を示す
		MD	$\boxed{\text{OK}}$, NG	CA の MD 基板の自己診断状態を示す
		AU	$\boxed{\text{OK}}$, NG	CA の AU 基板の自己診断状態を示す
		TR	$\boxed{\text{OK}}$, NG	CA の TR 基板の自己診断状態を示す
CAMERA ID		No.	1 to 96 ($\boxed{\text{X}}$)	カメラナンバーを 1 から 96 の範囲で設定 (設定なしの場合, "--" と表示される)
		ID : □□□□□□□	カメラ ID の設定	英数字, 記号およびスペースを用いて 10 文字以内でカメラ ID を設定
	1.10	No./ID ON BARS	CAM No.,CAM ID, $\boxed{\text{OFF}}$	上記カメラIDまたはカメラNo.をカラーバーモード時のみカメラの出力にミックスする機能の設定 (DISP スイッチが ON または OFF のときのみ有効)
LENS FILE	1.10	CENTER H POS	− 20 to 20 ($\boxed{\text{XX}}$)	センターマーカ位置の設定 (水平方向) 20 (右) ↔ − 20 (左)
	1.10	CENTER V POS	− 20 to 20 ($\boxed{\text{XX}}$)	センターマーカ位置の設定 (垂直方向) 20 (上) ↔ − 20 (下)
	1.10	CENTER POS STORE	MENU SEL スイッチを押して実行	現在のセンターマーカ位置を選択されているレンズファイルナンバに保存する
	1.10	No.	($\boxed{\text{0}}$) to 15	レンズファイルの選択 d) (表示例) No. : 1 ←レンズファイルナンバ (0〜15) Lens : 27 : A14x8BERM ←レンズ名 EX : 1.0 ←レンズエクステンダ値

c) LEVEL AUTO機能を実行するとメニューにて設定されたデータは一時クリアされ下記の自動レベル調整が順次行われる。終了後, 調整結果がマスターセットアップデータとして保存される。

1. 調整の基準となるリファレンスファイルが読み出される。
2. レンズは強制クローズされ, ブラックバランス自動調整が行われる。
3. TEST 2 (3段波形) 信号を用いたホワイトバランス自動調整の実行。

   参考

   このホワイトバランス調整はアンプゲインのドリフト分を補正するもので実際の被写体に対する色温度補正ではありません。本機ではガンマ・ニー補正の調整値はデジタル処理のため経時変化の影響を受けません。したがって, ガンマ・ニー補正の調整値はリファレンスファイル作成時の値になります。

d) IC26/AT-95基板 RAM 内に保存されている 16 種類のレンズファイルから, 装着したレンズに対応するファイルを選択します。選択されたレンズファイルごとにセンターマーカ等のデータを保存することができます。

3-1-2. Paint メニュー

Paint メニューには，ホワイトなどペイント調整項目がまとめられています。Paint メニューを表示させるにはTOP メニュー画面から選択してください。

(設定欄の□囲みは，工場出荷設定です)

ページ	Ver.	設定項目	設定	内容
VIDEO LEVEL		WHITE R/G/B	−99 to 99 ($\boxed{0}$)	R, G, B のゲイン調整
		BLACK R/G/B/M	−99 to 99 ($\boxed{0}$)	R, G, B マスターのブラックレベル調整
		FLARE R/G/B	−99 to 99 ($\boxed{0}$)	R, G, B のフレアレベル調整
		GAMMA R/G/B/M	−99 to 99 ($\boxed{0}$)	R, G, B マスターのガンマ補正カーブ調整
		FLARE	$\boxed{\text{ON}}$, OFF	フレア補正回路の ON/OFF
		TEST	1, 2, $\boxed{\text{OFF}}$	テスト信号の選択 1:のこぎり波のテスト信号を出力 2:3段波形のテスト信号を出力 OFF:テスト信号を出力しない
		CLEAR	MENU SEL スイッチを押して実行	VIDEO LEVEL ページの数値の設定を0にする (MENU SEL スイッチを押すと CLEAR 表示が点滅。再度 MENU SEL スイッチを押して実行，CANCEL ボタンで中止)
DETAIL 1		DETAIL	$\boxed{\text{ON}}$, OFF	解像度向上のためのディテール信号を付加する機能の ON/OFF
		LEVEL	−99 to 99 ($\boxed{0}$)	ディテール信号の総合レベルの設定
		LIMITTER	−99 to 99 ($\boxed{0}$)	ディテール信号の過大レベルに対してクリップするレベルの設定
		CRISPENING	−99 to 99 ($\boxed{0}$)	ディテール信号にクリスプニングをかけるレベルの設定
		LEVEL DEP	−99 to 99 ($\boxed{0}$)	レベルの低いところにつくディテールの量を抑えるレベルの設定
		LEVEL DEP	$\boxed{\text{ON}}$, OFF	レベルディペンド機能の ON/OFF
		TEST	1, 2, $\boxed{\text{OFF}}$	テスト信号の選択 1:のこぎり波のテスト信号を出力 2:3段波形のテスト信号を出力 OFF:テスト信号を出力しない
		CLEAR	MENU SEL スイッチを押して実行	DETAIL1 ページの数値の設定を0にする (MENU SEL スイッチを押すと CLEAR 表示が点滅。再度 MENU SEL スイッチを押して実行，CANCEL ボタンで中止)
DETAIL2		DETAIL	$\boxed{\text{ON}}$, OFF	解像度向上のためのディテール信号を付加する機能の ON/OFF
		H/V RATIO	−99 to 99 ($\boxed{0}$)	H ディテール信号と V ディテール信号のミックス比の設定
		FREQUENCY	−99 to 99 ($\boxed{0}$)	H ディテール信号の周波数 (大きさ) の設定
		MIX RATIO	−99 to 99 ($\boxed{0}$)	ガンマー補正回路の前後につけるHディテール信号のミックス比の設定
		W.LIMITTER	−99 to 99 ($\boxed{0}$)	ディテール信号の十方向過大レベルに対してクリップするレベルの設定
		B.LIMITTER	−99 to 99 ($\boxed{0}$)	ディテール信号の一方向過大レベルに対してクリップするレベルの設定
		COMB	−99 to 99 ($\boxed{0}$)	COMB フィルターの効く量を設定 99 (クロスカラー減少) ↔ −99 (クロスカラー増加するが透明感のある画像が得られる)
		KNEE APRT.	ON, $\boxed{\text{OFF}}$	ニーアパーチャー機能の ON/OFF
		TEST	1, 2, $\boxed{\text{OFF}}$	テスト信号の選択 1:のこぎり波のテスト信号を出力 2:3段波形のテスト信号を出力 OFF:テスト信号を出力しない
		CLEAR	MENU SEL スイッチを押して実行	DETAIL2 ページの数値の設定を0にする (MENU SEL スイッチを押すと CLEAR 表示が点滅。再度 MENU SEL スイッチを押して実行，CANCEL ボタンで中止)

ページ	Ver.	設定項目	設定	内容
SKIN DETAIL		SKIN DETAIL	ON, $\boxed{\text{OFF}}$	スキントーンディテール機能の ON/OFF
		LEVEL	−99 to 99 ($\boxed{0}$)	スキントーンディテール量の設定
		PHASE	100° to 170° ($\boxed{120}$)	スキントーンディテール機能が効く範囲の設定
		WIDTH	0° to 90° ($\boxed{60}$)	スキントーンディテール機能が効く色相幅の調整
		SATURATION	−99 to 99 ($\boxed{0}$)	スキントーンディテール機能が効く彩度の調整
		GATE	ON, $\boxed{\text{OFF}}$	スキントーンディテール機能が効く範囲のビューファインダー内の表示
	1.10	AUTO HUE	MENU SEL スイッチを押して実行	スキントーンディテール機能が効く範囲を自動設定する (VF のゲートマーカを被写体の肌色に合わせて測定)
		CLEAR	MENU SEL スイッチを押して実行	SKIN DETAIL ページの数値の設定を 0 にする (MENU SEL スイッチを押すと CLEAR 表示が点滅。再度 MENU SEL スイッチを押して実行，CANCEL ボタンで中止)
GAMMA		GAMMA R/G/B/M	−99 to 99 ($\boxed{0}$)	R, G, B およびマスターのガンマ補正カーブの設定
		COARSE	0.40, $\boxed{0.45}$, 0.50	マスターガンマの補正カーブをステップ単位で設定
		GAMMA	$\boxed{\text{ON}}$, OFF	ガンマ補正機能の ON/OFF
	1.07	BLACK GAMMA	−99 to 99 ($\boxed{0}$)	ブラックガンマ（マスター）の調整 e)
	1.07	BLACK GAMMA	ON, $\boxed{\text{OFF}}$	ブラックガンマ機能の ON/OFF e)
		TEST	1, 2, $\boxed{\text{OFF}}$	テスト信号の選択 1 : のこぎり波のテスト信号を出力 2 : 3 段波形のテスト信号を出力 OFF : テスト信号を出力しない
		CLEAR	MENU SEL スイッチを押して実行	GAMMA ページの数値の設定を 0 にする (MENU SEL スイッチを押すと CLEAR 表示が点滅。再度 MENU SEL スイッチを押して実行，CANCEL ボタンで中止)
KNEE/W. CLIP		POINT	−99 to 99 ($\boxed{0}$)	オートニー機能 OFF 時のニーポイントレベルの設定
		SLOPE	−99 to 99 ($\boxed{0}$)	オートニー機能 OFF 時のニースロープレベルの設定
		KNEE	$\boxed{\text{ON}}$, OFF	ニー補正回路の ON/OFF
		AUTO KNEE	ON, $\boxed{\text{OFF}}$	オートニー機能の ON/OFF
		KNEE MAX	ON, $\boxed{\text{OFF}}$	ニースロープレベルを最大（傾き 0）にする機能の ON/OFF
		WHITE CLIP	−99 to 99 ($\boxed{0}$)	ホワイトクリップレベルの設定
		WHITE CLIP	$\boxed{\text{ON}}$, OFF	ホワイトクリップ機能の ON/OFF
		TEST	1, 2, $\boxed{\text{OFF}}$	テスト信号の選択 1 : のこぎり波のテスト信号を出力 2 : 3 段波形のテスト信号を出力 OFF : テスト信号を出力しない
		CLEAR	MENU SEL スイッチを押して実行	KNEE/W.CLIP ページの数値の設定を 0 にする (MENU SEL スイッチを押すと CLEAR 表示が点滅。再度 MENU SEL スイッチを押して実行，CANCEL ボタンで中止)

e) TALLY ランプ点灯中は操作できません。また，System Config メニューの中で操作が禁止されている場合があります。
操作時画面上にノイズが出ます。

ページ	Ver.	設定項目	設定	内容
MATRIX		G-R, B-R	− 99 to 99 ($\boxed{0}$)	G-R, B-R, R-G, B-G, R-B, G-B のそれぞれのリニアマトリックス係数を任意に設定（ユーザーマトリックス補正係数の設定)
		R-G, B-G	− 99 to 99 ($\boxed{0}$)	
		R-B, G-B	− 99 to 99 ($\boxed{0}$)	
		MATRIX	$\boxed{\text{ON}}$, OFF	リニアマトリックス補正機能の ON/OFF
		USER[f]	$\boxed{\text{ON}}$, OFF	ユーザーが設定したリニアマトリックス補正係数使用のON/OFF
		PRESET[f]	$\boxed{\text{ON}}$, OFF	工場出荷時設定のリニアマトリックス補正係数使用の ON/OFF
		TEST	1, 2, $\boxed{\text{OFF}}$	テスト信号の選択 1 : のこぎり波のテスト信号を出力 2 : 3 段波形のテスト信号を出力 OFF : テスト信号を出力しない
		CLEAR	MENU SEL スイッチを押して実行	MATRIX ページの数値の設定を 0 にする (MENU SEL スイッチを押すと CLEAR 表示が点滅。再度 MENU SEL スイッチを押して実行，CANCEL ボタンで中止)
SCENE FILE		1	シーンファイル（撮影シーンに合わせてペインティングしたデータ）の保存と呼び出し **保存のしかた** 1. FILE STORE に→マークを合わせて MENU SEL スイッチを押し、「FILE STORE」を点滅させる。 2. 保存するファイルナンバー（1〜5）を選択する。 (すでにデータが保存されている場合は、新しいデータに入れ換わる。) **呼び出しかた** 呼び出すファイルナンバーに→マークを合わせて MENU SEL スイッチを押す。 • MENU SEL スイッチを押すたびに、現在の設定状態とシーンファイルの設定が切り換わる。 • シーンファイルが呼び出されているときは、ナンバー表示に＊マークがつく	
		2		
		3		
		4		
		5		
		FILE STORE		
		STANDARD	現在のペイント調整量とスイッチ設定を、リファレンスファイルとして保存されている基準値に戻す。	
SHUTTER *ROM バージョン Ver. 1.12 以降	1.12	SHUTTER	ON, $\boxed{\text{OFF}}$	シャッター機能の ON/OFF[u]
	1.10	SHUTTER	$\frac{1}{100}$, $\frac{1}{125}$, $\frac{1}{250}$, $\frac{1}{500}$, $\frac{1}{1000}$, $\frac{1}{2000}$	シャッタースピードの設定
	1.12	ECS	ON, $\boxed{\text{OFF}}$	ECS モードの ON/OFF[u]
	1.10	ECS	[h]	ECS（CLS）周波数の設定
	1.12	S-EVS	ON, $\boxed{\text{OFF}}$	S-EVS モードの ON/OFF[u]
	1.10	S-EVS	$\boxed{0}$ to 100%	垂直解像度の設定（パーセント表示） (OHB-450/451 を使用している場合はこの設定は無効です)
SHUTTER *ROM バージョン Ver. 1.11 まで	1.10	SELECT	$\boxed{\text{OFF}}$, SHUTTER, EVS, ECS	シャッターおよび EVS, ECS モードの選択
	1.10	SHUTTER	$\frac{1}{100}$, $\frac{1}{125}$, $\frac{1}{250}$, $\frac{1}{500}$, $\frac{1}{1000}$, $\frac{1}{2000}$	シャッタースピードの設定
	1.10	ECS	[h]	ECS（CLS）周波数の設定
	1.10	S-EVS	$\boxed{0}$ to 100%	垂直解像度の設定（パーセント表示） (OHB-450/451 を使用している場合はこの設定は無効です)
OTHERS	1.09	16 : 9/4 : 3 MODE	$\boxed{16:9}$, 4 : 3	カメラのビデオ信号出力のアスペクト比の設定[i]

f) USER 設定と PRESET 設定をともに ON にしたときは、両方の係数が加減算されたマトリックス係数になります。

h) 可変範囲は使用する OHB により異なります。詳細は OHB のオペレーションマニュアルをご覧ください。

i) 通常，CCU 接続時には CCU 側の設定に連動しますが，このメニューを使って強制的に切り換えることができます。

u) メニューとカメラ前面の SHUTTER スイッチから設定を行なった場合は，後から行なった設定が優先されます。
また本メニューで SHUTTER と ECS を同時に ON にしたときは ECS モードが，ECS と S-EVS を同時に ON にしたときは S-EVS モードが優先されます。

3-1-3. Maintenance メニュー

Maintenanceメニューには，カメラエンコーダ出力レベル調整等カメラの保守に必要な調整項目がまとめられています。
工場出荷時，本メニューは表示されません。表示させるには，AT-95基板内のスイッチ設定が必要です。詳しくは，「1-3. 基板内スイッチの機能—AT-95基板」を参照してください。
Maintenance メニューを表示させるにはTOPメニュー画面から選択してください。

(設定欄の□囲みは，工場出荷設定です)

ページ	Ver.	設定項目	設定	内容
VBS		SYNC LEVEL	−99 to 99 ($\boxed{XX}$)	カメラのエンコーダ出力のSYNCレベルの設定
		Y LEVEL	−99 to 99 ($\boxed{XX}$)	カメラのエンコーダ出力のYレベルの設定
		BURST LEVEL	−99 to 99 ($\boxed{XX}$)	カメラのエンコーダ出力のBURSTレベルの設定
		CHROMA LEVEL	−99 to 99 ($\boxed{XX}$)	カメラのエンコーダ出力のCHROMAレベルの設定
		Q/V LEVEL	−99 to 99 ($\boxed{XX}$)	カメラのエンコーダ出力のQ (V) レベルの設定
		BF PHASE	−99 to 99 ($\boxed{XX}$)	カメラのエンコーダ出力のBURST位相の設定
		SC-H PHASE	−99 to 99 ($\boxed{XX}$)	カメラのエンコーダ出力のSC-H位相の設定
		V BLANKING	19,$\boxed{20}$, 21H	カメラのエンコーダ出力のV BLANKING幅の設定 (CCU接続時19Hに固定される)
WHITE SHADING		V SAW R/G/B	−99 to 99 ($\boxed{XX}$)	R, G, BごとのホワイトシェーディングのV.SAW補正量を調整
		V PARA R/G/B	−99 to 99 ($\boxed{XX}$)	R, G, BごとのホワイトシェーディングのV.PARA補正量を調整
		H SAW R/G/B	−99 to 99 ($\boxed{XX}$)	R, G, BごとのホワイトシェーディングのH.SAW補正量を調整
		H PARA R/G/B	−99 to 99 ($\boxed{XX}$)	R, G, BごとのホワイトシェーディングのH.PARA補正量を調整
		WHITE R/G/B	−99 to 99 ($\boxed{XX}$)	R, G, Bごとのホワイトレベルを調整
		V MOD R/G/B/M	−99 to 99 ($\boxed{XX}$)	R, G, Bごとまたはマスターのレンズおよびプリズム系のVモジュレーションシェーディングのV.SAW補正量を調整[j]
		V MOD	ON ,$\boxed{OFF}$	Vモジュレーションシェーディング補正機能のON/OFF
		AUTO WHITE	MENU SELスイッチを押して実行	ホワイトバランス自動調整の開始
		CLEAR	MENU SELスイッチを押して実行	WHITE SHADINGページの数値の設定を0にする (MENU SELスイッチを押すとCLEAR表示が点滅。再度MENU SELスイッチを押して実行，CANCELボタンで中止)
BLACK SHADING		V SAW R/G/B	−99 to 99 ($\boxed{XX}$)	R, G, BごとのブラックシェーディングのV.SAW補正量を調整
		H SAW R/G/B	−99 to 99 ($\boxed{XX}$)	R, G, BごとのブラックシェーディングのH.SAW補正量を調整
		BLK SET R/G/B	−99 to 99 ($\boxed{XX}$)	R, G, BごとのBLACK SET補正量を調整 (各ゲインごとに値は異なる)
		BLACK R/G/B/M	−99 to 99 ($\boxed{XX}$)	R, G, Bごとまたはマスターのブラックレベルを調整
		MASTER GAIN	-3,0,3,6,9,12,18,24, 30 dB ($\boxed{X}$)	マスターゲインの設定
		AUTO BLACK	MENU SELスイッチを押して実行	ブラックバランス自動調整の開始
		CLEAR	MENU SELスイッチを押して実行	BLACK SHADINGページの数値の設定を0にする (MENU SELスイッチを押すとCLEAR表示が点滅。再度MENU SELスイッチを押して実行，CANCELボタンで中止)

[j] マスターのVモジュレーションシェーディングを調整したときはRとBのプリズム系のV.SAW成分も同時に補正されます。

ページ	Ver.	設定項目	設定	内容
AUTO SET UP		AUTO WHITE	MENU SEL スイッチを押して実行	ホワイトバランス自動調整の開始
		AUTO BLACK	MENU SEL スイッチを押して実行	ブラックバランス自動調整の開始 (実行中に MENU SEL スイッチを押すと処理を中止する)
		LEVEL AUTO	MENU SEL スイッチを押して実行	カメラ内部回路レベルの自動調整の開始 c) (実行中に MENU SEL スイッチを押すと処理を中止する)
	1.10	AUTO HUE	MENU SEL スイッチを押して実行	スキントーンディテール機能が効く範囲を自動設定する (VF のゲートマーカを被写体の肌色に合わせて測定)
		WHITE SHADING	MENU SEL スイッチを押して実行	ホワイトシェーディング自動調整の開始 (実行中に MENU SEL スイッチを押すと処理を中止する)
		BLACK SHADING	MENU SEL スイッチを押して実行	ブラックシェーディング自動調整の開始 k) (実行中に MENU SEL スイッチを押すと処理を中止する)
	1.10	COLOR REF (SELF)	MENU SEL スイッチを押して実行	1台のカメラを使い，OHB 間のカラーセットアップを行うときのカラーリファレンスの作成（VF のゲートマーカをマクベスチャートに合わせて測定する。実行中に MENU SEL スイッチを押すと処理を中止する。）m)
	1.10	COLOR SETUP (SELF)	MENU SEL スイッチを押して実行	カラーリファレンスからカラーマトリックスを自動計算する。 (VF のゲートマーカをマクベスチャートに合わせて測定する。実行中に MENU SEL スイッチを押すと処理を中止する。) n)
DATE/TIME		YY/MM/DD HH : MM : SS		内蔵時計の設定（時間 HH, 分 MM のみ）
		DATE ON BARS	ON, $\boxed{\text{OFF}}$	日付文字をカラーバーモード時にカメラ出力にミックスする機能の ON/OF（DISP スイッチが ON または OFF のときのみ有効）
		TIME ON BARS	ON, $\boxed{\text{OFF}}$	時間文字をカラーバーモード時にカメラ出力にミックスする機能の ON/OFF（DISP スイッチが ON または OFF のときのみ有効）
OTHERS		S/N MEASURE	ON, $\boxed{\text{OFF}}$	ON : S/N 値を測定時設定する。DETAIL, CHROMA, GAMMA, MATRIX, FLARE が一時的に OFF になる。 OFF :DETAIL 等の設定は元に戻る。
		MOD MEASURE	ON, $\boxed{\text{OFF}}$	ON : 変調度を測定時設定する。DETAIL, GAMMA, MATRIX, FLARE が一時的に OFF になる。 OFF : DETAIL 等の設定は元に戻る。
		MASTER BLACK	−99 to 99 ($\boxed{0}$)	S/N 値および変調度測定時のマスターブラックの調整
		DETAIL	$\boxed{\text{ON}}$, OFF	
		CHROMA	$\boxed{\text{ON}}$, OFF	
		GAMMA	$\boxed{\text{ON}}$, OFF	
		MATRIX	$\boxed{\text{ON}}$, OFF	
		FLARE	$\boxed{\text{ON}}$, OFF	

c) LEVEL AUTO 機能を実行するとメニューにて設定されたデータは一時クリアされ下記の自動レベル調整が順次行われる。
終了後，調整結果がリファレンスファイルとして保存される。
1. レンズは強制クローズされ，ブラックバランス自動調整が実行される
2. TEST 2（3 段波形）信号を用いたホワイトバランス自動調整の実行

参考

このホワイトバランス調整はアンプゲインのドリフト分を補正するもので実際の被写体に対する色温度補正ではありません。
本機ではガンマ・ニー補正の調整値はデジタル処理のため経時変化の影響を受けません。したがって従来の LEVEL AUTO 調整に含まれていたガンマ・ニーの調整は行われません。

k) 別売の CCD ユニット OHB-450/451/550/550WS を本機に組み込んで初めて使用するとき，または交換したときは必ずブラックシェーディング自動調整を行なってください。

m) 複数台のカメラ間でカラーセットアップを行う場合は MSU からコントロールしてください。

n) 複数台のカメラ間でカラーセットアップを行う場合と異なり，データ転送は行われません。再計算したいとき実行してください。
実行するとカラーマトリックスデータは一時的に System Config メニューの OHB マトリックスに反映されます。カラーマトリックスデータを保存するときには，Triming メニューの OHB FILE STORE を実行してください。

3-1-4. Reference メニュー

オートセットアップ調整を行う際の基準値，および標準状態のスイッチデータをリファレンスファイルとして登録，保存することができます。また，現在登録されているリファレンスファイルをクリアすることもできます。

工場出荷時，本メニューは表示されません。表示させるには，AT-95基板内のスイッチ設定が必要です。詳しくは，「1-3. 基板内スイッチの機能—AT-95基板」を参照してください。

Reference メニューを表示させるにはTOPメニュー画面から選択してください。

注意

REFERENCE FILEページのFILE STOREを実行すると、直前に設定されたPaintメニュー，Maintenanceメニューおよび System Config メニューの項目の設定値が基準値として登録されます。

参考

各種設定で変更した値をリファレンスファイルに保存した基準値に戻す場合は，MSU／RCPまたはメニューを使ってスタンダードファイルを呼び出してください。

ページ	Ver.	設定項目	設定	内容
REFERENCE FILE		FILE STORE	MENU SELスイッチを押して実行	各項目の調整値を基準値として登録
		CLEAR FILE	MENU SELスイッチを押して実行	リファレンスファイルに保存されているデータがすべてクリアされる (一時的に現在のリファレンスファイルをクリアp) する)

p) クリアした後FILE STOREを実行しないで電源をOFFした場合は，元の状態に戻ります。

3-1-5. Triming メニュー

部品交換時に調整されたデータをトリミングファイルとして登録，保存することができます。また，現在登録されている調整値をすべてクリアすることもできます。

工場出荷時，本メニューは表示されません。表示させるには，AT-95基板内のスイッチ設定が必要です。詳しくは，「1-3. 基板内スイッチの機能—AT-95基板」を参照してください。

Triming メニューを表示させるにはTOPメニュー画面から選択してください。

注意

TRIMING FILEページのFILE STOREを実行すると、直前に設定されたMaintenanceメニューおよびSystem Config メニューの項目の設定値が基準値として登録されます。

ページ	Ver.	設定項目	設定	内容
TRIMING FILE		FILE STORE	MENU SELスイッチを押して実行	各項目の調整値を基準値として登録
		CLEAR FILE	MENU SELスイッチを押して実行	トリミングファイルに保存されているデータがすべてクリアされる (一時的に現在のトリミングファイルをクリアp) する)
OHB FILE		FILE STORE	MENU SELスイッチを押して実行	使用するCCDユニットに応じた特性を保存する。工場出荷時，標準データが保存されている。 (NDフィルタのオフセット値，OHBマトリックス等のデータが保存できる)
LENS FILE	1.10	LENS FILE STORE	MENU SELスイッチを押して実行	使用するレンズに応じた特性を保存する。 工場出荷時，標準データが保存されている。
	1.10	SELECT CURRENT LENS	$\boxed{0}$ to 49	Operationメニューの LENS FILEページで現在選択されているレンズファイルにレンズデータを読み込む
	1.10	RESET ALL LENS	MENU SELスイッチを押して実行	レンズファイル16個がすべてリセットされる (表示例) No. : 1 ←レンズ登録ナンバ (0~49) Lens : 27 : A14x8BERM ←レンズ名 EX : 1.0 ←レンズエクステンダ値

p) クリアした後FILE STOREを実行しないで電源をOFFした場合は，元の状態に戻ります。

3-1-6. System Config メニュー

System config メニューには，本機の基板や部品を交換したときなどに必要な調整項目がまとめられています。
工場出荷時，本メニューは表示されません。表示させるには，AT-95基板内のスイッチ設定が必要です。詳しくは，「1-3. 基板内スイッチの機能—AT-95基板」を参照してください。
System config メニューを表示させるにはTOPメニュー画面から選択してください。

(設定欄の□囲みは，工場出荷設定です。XX, XXX は2桁または3桁の16進数を示します。)

ページ	Ver.	設定項目	設定	内容
DATE/TIME		YY/MM/DD HH : MM : SS		内蔵カレンダ / 時計の設定
		RESET	MENU SEL スイッチを回して実行	時間HH/ 分MM/ 秒SSのリセット
Y/CHROMA		SC FREQ	XXX ($\boxed{\text{XX}}$)	カメラのサブキャリア周波数の設定
		Y SYNC	XXX ($\boxed{\text{XX}}$)	カメラのY出力のSYNCレベルの設定
		Y SETUP	XXX ($\boxed{\text{XX}}$)	カメラのY出力のSERUPレベルの設定
		Y VIDEO	XXX ($\boxed{\text{XX}}$)	カメラのY出力のYレベルの設定
		TEST SETUP	XXX ($\boxed{\text{XX}}$)	カメラのエンコーダ出力のSETUPレベルの設定
		BURST LVL	XXX ($\boxed{\text{XX}}$)	カメラのエンコーダ出力のBURSTレベルの設定
		CHROMA LVL	XXX ($\boxed{\text{XX}}$)	カメラのエンコーダ出力のCHROMAレベルの設定
		Q/V LEVEL	XXX ($\boxed{\text{XX}}$)	カメラのエンコーダ出力のQ (V) レベルの設定
		SC-H PHASE	XXX ($\boxed{\text{XX}}$)	カメラのエンコーダ出力のSC-H位相の設定
		REG LVL	XXX ($\boxed{\text{XX}}$)	カメラのR/G/B出力レベルの設定
		CB	ON, $\boxed{\text{OFF}}$	Y/CHROMAページの各レベル設定時におけるカメラカラーバー信号出力のON/OFF
PR/VA/TEST		PR ADG R/G/B	XXX ($\boxed{\text{XX}}$)	PR基板におけるR/G/B信号用AD変換器の基準レベルの調整
		VA MOD R/G/B	XXX ($\boxed{\text{XX}}$)	VA基板におけるR, G, Bごとのモジュレーションバランスの調整
		G CLOCK	XXX ($\boxed{\text{XX}}$)	PR基板におけるG信号用AD変換器に入力するクロックパルスの位相調整 (注意：OHB交換時，再調整が必要。変調度最大の数値を設定)
		R/B CLOCK	XXX ($\boxed{\text{XX}}$)	PR基板におけるR/B信号用AD変換器に入力するクロックパルスの位相調整 (注意：OHB交換時，再調整が必要。偽信号最小レベルの数値を設定)
		M.BLACK	XXX ($\boxed{\text{XX}}$)	マスターブラック信号の調整
		TEST2 HI	XXX ($\boxed{\text{XX}}$)	VA基板におけるTEST2（3段波形）信号のハイレベルの調整
		TEST2 MID	XXX ($\boxed{\text{XX}}$)	VA基板におけるTEST2（3段波形）信号のミドルレベルの調整
		TEST CLIP	XXX ($\boxed{\text{XX}}$)	VA基板におけるTEST1 (のこぎり波) 信号のクリップレベルの調整
		TEST	1, 2, $\boxed{\text{OFF}}$	PR/VR/TESTページの調整に必要なテスト信号の選択 1：のこぎり波のテスト信号を出力 2：3段波形テスト信号を出力 OFF：テスト信号を出力しない
PRE KNEE/ZEBRA (続く)		PREKNEE1 R/G/B	XXX ($\boxed{\text{XX}}$)	VA基板におけるR, G, BごとのPRE-KNEE1レベルの調整
		PREKNEE2 R/G/B	XXX ($\boxed{\text{XX}}$)	VA基板におけるR, G, BごとのPRE-KNEE2レベルの調整
		APERTURE	XXX ($\boxed{\text{XX}}$)	アパーチャ補正信号レベルの調整

ページ	Ver.	設定項目	設定	内容
PRE KNEE/ZEBRA		WHITE CLIP	XXX ($\boxed{\text{XX}}$)	ホワイトクリップレベルの調整
		WHITE CLIP	$\boxed{\text{ON}}$, OFF	ホワイトクリップ機能の ON/OFF
		ZEBRA1 LEVEL,RANGE	XXX ($\boxed{\text{XX}}$)	ゼブラ 1 信号の検出センター値および検出範囲の設定
		ZEBRA2 LEVEL	XXX ($\boxed{\text{XX}}$)	ゼブラ 2 信号の検出値の設定
		Z.DISP	1,2,$\boxed{\text{1\&2}}$	VF 内に表示するゼブラ信号の設定 1 : ゼブラ 1 信号 2 : ゼブラ 2 信号 1&2 : ゼブラ 1, 2 信号を同時に表示
		TEST	1, 2, $\boxed{\text{OFF}}$	PREKNEE/ZEBRA ページの調整に必要なテスト信号の選択 1 : のこぎり波のテスト信号を出力 2 : 3 段波形テスト信号を出力 OFF : テスト信号を出力しない
VTR/CCU		VTR R-Y	XXX ($\boxed{\text{XX}}$)	R-Y 色差信号のレベル調整
		VTR B-Y	XXX ($\boxed{\text{XX}}$)	B-Y 色差信号のレベル調整
		CCU Y SAMP	XXX ($\boxed{\text{XX}}$)	Y 信号にミックスする SAMPLE パルスのレベル調整
		CCU R-Y SYNC	XXX ($\boxed{\text{XX}}$)	R-Y 信号にミックスする SYNC パルスのレベル調整
		CCU B-Y SAMP	XXX ($\boxed{\text{XX}}$)	B-Y 信号にミックスする SAMPLE パルスのレベル調整
		RGB OFFSET	XXX ($\boxed{\text{XX}}$)	G 信号のレベル調整
		TEST	1, 2, $\boxed{\text{OFF}}$	VTR/CCU ページの調整に必要なテスト信号の選択 1 : のこぎり波のテスト信号を出力 2 : 3 段波形テスト信号を出力 OFF : テスト信号を出力しない
		CB	ON, $\boxed{\text{OFF}}$	VTR/CCU ページの各レベル設定時におけるカメラカラーバー信号出力の ON/OFF
IRIS		LEVEL	XXX ($\boxed{\text{XX}}$)	オートアイリスレベルの設定
		APL RATIO	XXX ($\boxed{\text{XX}}$)	オートアイリスの効きかたを設定−99 (PEAK) ↔99 (AVERAGE)
COLOR SETUP	1.10	COLOR REF (SELF)	MENU SEL スイッチを押して実行	1 台のカメラを使い，OHB 間のカラーセットアップを行うときのカラーリファレンスの作成 (VF のゲートマーカをマクベスチャートに合わせて測定する。実行中に MENU SEL スイッチを押すと処理を中止する。) m)
	1.10	COLOR SETUP (SELF)	MENU SEL スイッチを押して実行	カラーリファレンスからカラーマトリックスを自動計算する。(VF のゲートマーカをマクベスチャートに合わせて測定する。実行中に MENU SEL スイッチを押すと処理を中止する。) n)
	1.10	(OHB MATRIX) G-R, B-R R-G, B-G R-B, G-B	 − 99 to 99 ($\boxed{0}$) − 99 to 99 ($\boxed{0}$) − 99 to 99 ($\boxed{0}$)	OHB 間，カメラ間での差分を調整するための OHB リニアマトリックス。係数を任意に設定 (OHB マトリックス補正係数の設定) r)
	1.10	OHB MTX	$\boxed{\text{ON}}$, OFF	OHB マトリックス補正機能の ON/OFF
	1.10	CM ADD LVL	$\boxed{0}$ to 16	カラーセットアップ時の微調整に使用する。下記項目で選択された色に計算値をより合わせるよう 16 段階で補正し，OHB マトリックスを再計算する。 (0 を選択した場合この機能は OFF であることを示す) s) t)
	1.10	CM ADD COLOR	$\boxed{0}$ to 17	カラーセットアップ時の微調整に使用する。マクベスチャート (18 色) の中から補正したい色を VF のゲートマーカで選択し，OHB マトリックスを再計算する。t)

m) 複数台のカメラ間でカラーセットアップを行う場合は MSU からコントロールしてください。

n) 複数台のカメラ間でカラーセットアップを行う場合と異なり，データ転送は行われません。再計算したいとき実行してください。実行するとカラーマトリックスデータは一時的に System Config メニューの OHB マトリックスに反映されます。カラーマトリックスデータを保存するときには、Triming メニューの OHB FILE STORE を実行してください。

r) Paint メニューにて MATRIX OFF に設定して調整してください。調整値を保存するときには，Triming メニューの OHB FILE STORE を実行してください。

s) この変更は，COLOR SETUP (SELF) を実行した後，System Config メニューの OHB マトリックスに反映されます。保存するときには，Triming メニューの OHB FILE STORE を実行してください。CM ADD LVL を 1 ずつ増やすことにより，CM ADD COLOR で選択された色の重み付けが1ずつ増加します。重み付けされた色に対して誤差を減らしながら全体の誤差が最小になるように補正されます。

t) カラーセットアップ終了後，一旦電源を OFF したあとでは再計算を行いません。

ページ	Ver.	設定項目	設定	内容
OTHERS 1		FILTER,WHT MEM	$\boxed{\text{ON}}$, OFF	ON：ホワイトバランスメモリは，各CCフィルタとWHITE BALスイッチのA・Bごと（計8個）に設定できる。 OFF：ホワイトバランスメモリは，WHITE BALスイッチのA・Bのみ（2個）設定できる。
		NTSC ENC	$\boxed{\text{WIDE}}$, NRW	NTSCエンコーダーのQ軸帯域の設定
		ROTARY	$\boxed{\text{STD}}$, RVS	カメラ前面から見てMENU SELスイッチの方向に回したときのモード設定 STD：カーソル下方へ移動、数値は増加 RVS：カーソル上方へ移動、数値は減少
		OWN CALL	R, $\boxed{\text{F\&R}}$, OFF	CAのCALL SWを押したとき，本機のTALLYランプを点灯させる機能のON/OFFおよび点灯するTALLYランプの種類を設定(CCU接続時のみ有効，スタンドアローン時でRCP/MSUを使用していない時は設定表示にかかわらず常にOFF) R：リアTALLYランプのみ F&R：リアおよびフロントTALLYランプ OFF：点灯しない
		CENTER H POS	−20 to 20 ($\boxed{\text{XX}}$)	センターマーカ位置の設定（水平方向） 20（右）↔ −20（左）
		CENTER V POS	−20 to 20 ($\boxed{\text{XX}}$)	センターマーカ位置の設定（垂直方向） 20（上）↔ −20（下）
		LENS VTR S/S	TALK, $\boxed{\text{RET2}}$	レンズおよび本体のVTR S/S SWのモード設定 TALK：レンズのVTR S/S SWがINCOM TALK SWとして(momentary)，本体のVTR S/S SWがRET2 SWとして機能する RET2：レンズのVTR S/S SWがRET2 SWとして，本体のVTR S/S SWがINCOM TALK SWとして機能する
		VF ? DISPLAY	$\boxed{\text{ON}}$, OFF	自己診断がNGのときなど，DISPスイッチON時にVF画面右上へ?マークを表示する機能のON/OFF
		PinP RET RVS	$\boxed{\text{RVS1}}$, RVS2, OFF	PinPモード時，VF画面の表示方法を設定 (本機では機能しません)
OTHERS 2		F TALLY RVS	$\boxed{\text{ON}}$, OFF	CCUまたはVTRからTALLY信号入力時，MSUまたはRCPのCALL SWが押されたときのTALLYランプの動作設定 ON：リアおよびフロントTALLYランプを消灯させる OFF：リアTALLYランプのみ消灯させる
	1.07	BLK GAM INHIBIT	$\boxed{\text{ON}}$, OFF	ON：MSUまたはPaintメニューでブラックガンマ調整およびブラックガンマON/OFFの操作を禁止する OFF：上記操作が可能
	1.10	CHAR CAM No.	$\boxed{\text{1, 2, 3}}$, A,B,C	Operationメニューの CAMERA No.ページで設定できるカメラナンバーの表示方法の設定 1,2,3：カメラナンバーを数字で表示 A,B,C：カメラナンバー1~27をA~Zで表示（28台以上のカメラを接続する場合は数字表示に設定してください）
	1.10	WHT SETUP MODE	$\boxed{\text{AWB}}$, LEVEL	AWB：LEVEL AUTO機能実行後，ホワイトバランス調整データは実行前の値に戻る LEVEL：LEVEL AUTO機能実行後，ホワイトバランス調整データはTEST 2信号を用いたホワイトバランス調整後の値に変わる
	1.10	AW SHADING MODE	$\boxed{\text{RGB}}$, RB ONLY	RGB：ホワイトシェーディング自動調整実行時，R, G, Bすべての波形をフラットにする RB ONLY：ホワイトシェーディング自動調整実行時，RとBの波形をフラットにする
	1.13	TALK PRIORITY	$\boxed{\text{TALK1}}$, TALK2	CA-550の2チャンネルインカム機能（オプション）をチャンネル1，チャンネル2共リモートモードで使用しているとき，レンズのVTR S/SスイッチによるインカムマイクのON/OFFをどちらのチャンネルに割り当てるかを設定
	1.10	CANON U-4 MODE	ON, $\boxed{\text{OFF}}$	BVP-550をCanon社製U-4システムに組み込んで使用するときのみON。それ以外はOFF。
	2.01	W GAIN	ON, $\boxed{\text{OFF}}$	(本機では機能しません)

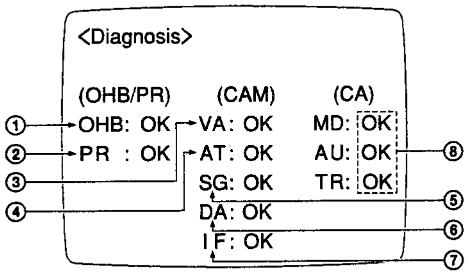
3-2. 自己診断

自己診断（Diagnosis）メニューは各プラグイン基板およびOHBの故障診断に使用する。メニューはOperationメニュー上に表示される。

- **操作方法**

  3-1項を参照してOperationメニューの中の「Diagnosis」を表示させる。

- **画面表示**


<Diagnosis>
(OHB/PR)
(CAM)
(CA)
①
OHB: OK
VA: OK
MD: OK
②
PR : OK
AT: OK
AU: OK
⑧
③
SG: OK
TR: OK
④
DA: OK
⑤
IF: OK
⑥
⑦

- **表示説明**

表示	基板/ブロック	NG診断ポイント
①	OHB (CCD UNIT)	IC18, 19/TG-159との通信エラー
②	PR-211	IC49との通信エラー
③	VA-163	IC26との通信エラー
④	AT-95	IC46との通信エラー
⑤	SG-234	IC21との通信エラー
⑥	DA-88	IC10との通信エラー
⑦	IF-510	IC155との通信エラー

CAの項についてはカメラアダプタに付属のメンテナンスマニュアルをご覧ください。

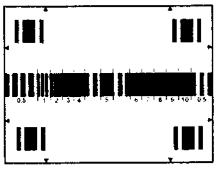
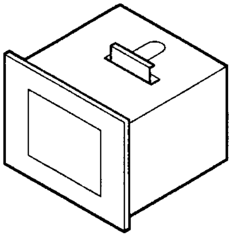
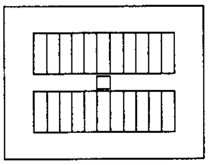
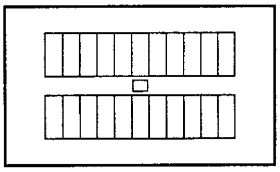
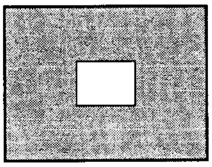
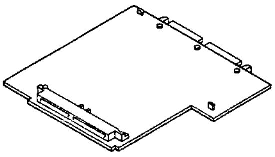
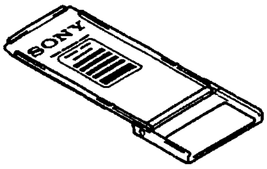
参考

CA-550以外の機器を接続したとき，またはCA-550を接続していてもCAとCCUが接続されていないとき，⑧の項はすべて“——”と表示されます。

第4章
電気調整要項

4-1. 準備

4-1-1. 必要機器

マルチバーストチャート	パターンボックス PTB-500
ソニー部品番号 : J-6026-110-A 	ソニー部品番号 : J-6029-140-B • テストチャート光源用 電源 AC90-240V 
グレースケールチャート	グレースケールチャート（16 : 9）
ソニー部品番号 J-6026-130-B 	ソニー部品番号 J-6394-080-A 
ホワイトウインドウチャート	延長基板 EX-464
黒い紙の中央に穴を開けます。 	ソニー部品番号 J-6395-040-A BVP-550 基板延長用（別売り） 
延長基板 BKP-7900	
CCU-700 基板延長用（別売り） 	

測定器

- 周波数カウンタ
  アドバンテスト TR5821AK または相当品
- オシロスコープ
  ソニーテクトロニクス 2465 または相当品
- 波形モニタ／ベクトルスコープ（SETUP 0 対応）
  ソニーテクトロニクス 1750 または相当品
- デジタル電圧計
  アドバンテスト TR6845 または相当品
- ビデオ信号発生器
  ソニーテクトロニクス 1410 または相当品
- カラーモニタ
  ソニー BVM-2011/3011 または相当品

関連機器

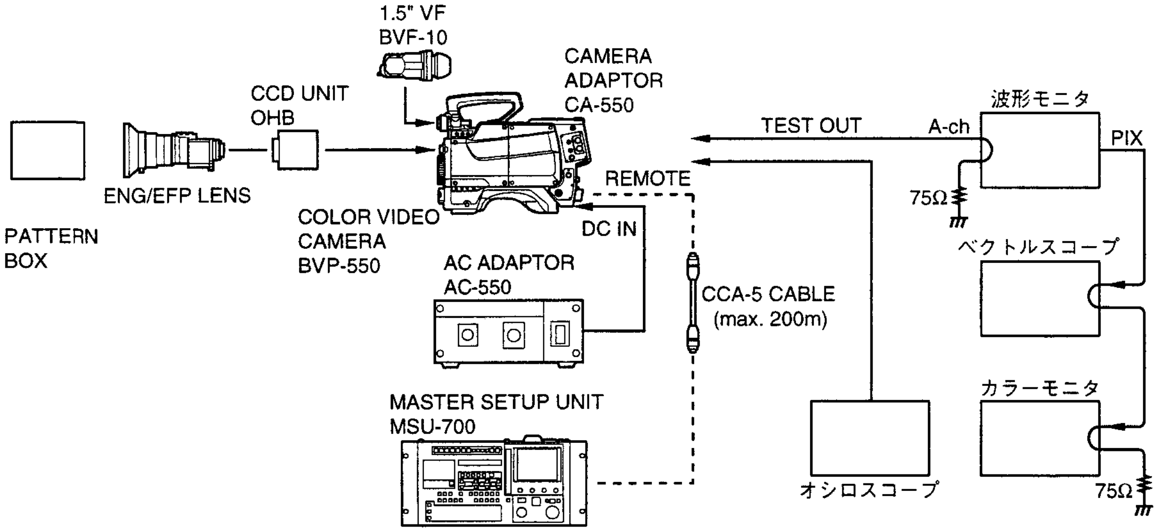
• CCD ユニット	: OHB-450/550 シリーズ
• カメラアダプタ	: CA-550
• AC アダプタ	: AC-550
• マスターセットアップユニット	: MSU-700

4-1-2. 調整上の注意

調整を始めるにあたって，注意しなければならない事項を下記に示します。

1. 測定器はすべて校正が済んでいること。
2. OHB-450/451/550/550WS, CA-550 および MSU-700 の調整が済んでいること。
3. 「4-1-5. 初期セッティング」が済んでいること。
4. 基板延長をするときには，本体の電源を OFF にすること。
5. OHB-550WS を組み込み，16 : 9 の画面モードで使用する場合はグレースケールチャートとして J-6394-080-A を使用すること。
6. 調整に使用するグレースケールチャートには中央白の両端に黒のベルベットを張り付けること。（詳しくはソニーのサービス担当者にご相談ください。）
7. BVP-550 に MSU-700 を接続した場合，カメラのサイドパネル上のスイッチは無効になります。各種設定は MSU-700 から行ってください。

4-1-3. 機器接続図


1.5" VF
BVF-10
CAMERA
ADAPTOR
CA-550
CCD UNIT
OHB
TEST OUT
A-ch
波形モニタ
PIX
REMOTE
75Ω
ENG/EFP LENS
COLOR VIDEO
CAMERA
BVP-550
DC IN
PATTERN
BOX
AC ADAPTOR
AC-550
ベクトルスコープ
CCA-5 CABLE
(max. 200m)
カラーモニタ
MASTER SETUP UNIT
MSU-700
オシロスコープ
75Ω

4-1-4. 設定メニューについて

この章では一部設定メニューを使用して調整を行っています。設定メニューの構成を以下に示します。その他，メニュー項目の全体構成を示す画面としてTOPメニュー画面があります。

Operation
Paint
Maintenance
Reference File
Triming File
System config

すべてのメニューを表示させるにはAT-95基板内のスイッチ設定が必要です。また，メニューの詳細については第3章を参照してください。

本章では設定メニュー内のページ操作を下記のように表記しています。

選択したページのタイトル (画面右上の表示)

例：TOPメニューから Paint → Skin Detail を選択した場合。
MENU : Paint
PAGE : Skin Detail (P4)

設定メニューの表示方法

1. AT-95基板のスイッチを設定する。
   S1-1 → ON
   S1-2 → OFF
   S1-3 → ON
   S1-4 → OFF
2. DISPスイッチ（サイドパネル）→ OFF
3. POWERスイッチ（カメラアダプタ）→ ON
4. MENU SELスイッチ（フロントパネル）を押しながらDISPスイッチを（OFFから）MENUにする。(TOPメニューが表示される)

注意

POWERスイッチをOFFにした場合は，再度上記の操作を行って（手順2から4）設定メニューを表示してください。

設定値の変更方法

MENU SELスイッチを回すことにより数値を変更できるITEMでは，下記の操作で設定値を確定またはキャンセルすることができます。

確定　　　: MENU SELスイッチを押す
キャンセル : 確定する前にCANCELボタンを押すと調整前のデータに戻る。
確定した後ではキャンセルできない

ファイルストア

調整を途中で終了する場合や基板延長などで電源を切る前には必ずファイルストアを実行してください。

4-1-5. 初期セッティング

基板内スイッチ：

注意

スイッチ設定をカスタマ設定位置より変える場合にはカスタマ設定位置を下表に書き留めておくことをお勧めします。調整終了後は，カスタマ設定位置に必ず戻してください。

基板	スイッチ	調整時の設定	カスタマ設定
AT-95	S1-1	ON	
	S1-2	OFF	
	S1-3	ON	
	S1-4	OFF	

設定メニュー：

MENU ： Operation
　PAGE ： Gain Sw (? 3)
　ITEM ： Low → 0dB
　ITEM ： Middle → 9dB
　ITEM ： High → 18dB
　PAGE ： Wide Screen (? 4)
　ITEM ： 16：9/4：3 MODE → 16：9
　　(OHB-550WS 使用時)
MENU ： Paint
　PAGE ： Video Level (P1)
　ITEM ： Test → Off
　PAGE ： Detail1 (P2)
　ITEM ： Detail → On
　PAGE ： Skin Detail (P4)
　ITEM ： Skin Detail → Off
　PAGE ： Gamma (P5)
　ITEM ： Gamma → On
　PAGE ： Knee/W.Clip (P6)
　ITEM ： Knee → Off
　ITEM ： White Clip → Off
　PAGE ： Matrix (P7)
　ITEM ： Matrix → Off

サイドパネル：
　VTR SAVE/STBY スイッチ → STBY
　GAIN スイッチ → L (0dB)
　OUTPUT/DCC スイッチ → CAM/OFF
　WHITE BAL スイッチ → PRST

フロントパネル：
　SHUTTER スイッチ → OFF

フィルタ設定：3200 K
　OHB-550/550WS → 1B (フィルタつまみ)
　OHB-450/451 → 1 (フィルタつまみ)

シーンファイルスタンダードの実行：
　MENU ： Paint
　PAGE ： Scene File (P8)
　ITEM ： Standard
　(MENU SEL スイッチを押して実行)

4-2. OHB 設置時の調整

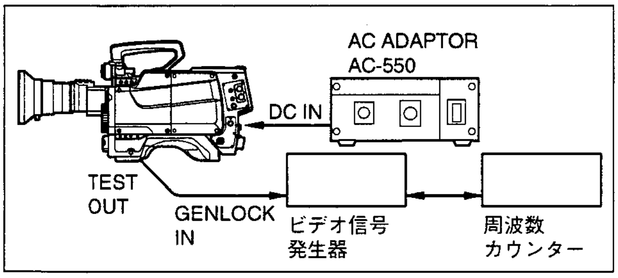
OHB を交換，または新規に取り付けた後，初めてフロントパネルのAUTO W/B BALスイッチを使ってブラックバランス自動調整を実行した場合，ブラックシェーディング調整も続けて自動的に実行されます。ブラックシェーディング自動調整が正常に終了すれば，4-2-3. Black Shading調整を行う必要はありません。

4-2-1. VCO CONT 周波数確認

注意事項：
この確認はCCD ユニット設置時のみ行ってください。
通電後 10 分以上経ってから測定してください。

準備：
RGB/ENC スイッチ（サイドパネル）→ ENC

測定器　：周波数カウンタ，ビデオ信号発生器
測定箇所：TEST OUT 端子
規格　　：3,579,545 ± 10 Hz



規格外の場合，以下の調整を行う。

調整手順：
1. MENU SELスイッチ（フロントパネル）を押しながらDISPスイッチ（サイドパネル）をMENUにする。
2. 調整箇所：
   MENU　：System config
   PAGE　：Y/Chroma (S2)
   ITEM　：SC FREQ
   規格　：3,579,545 ± 10 Hz

ファイルストア：
OHB ファイルストアを実行する。
MENU ：Triming File
PAGE ：OHB File (T2)
ITEM ：File Store
(MENU SEL スイッチを押して実行)

4-2-2. VA Gain 調整

感度・標準色温度設定：
VA ゲイン調整にはできるだけ反射型のチャート（反射率 89.9%）を使用してください。パターンボックスを使用する場合は良くメンテナンスされているものを使用してください。
- チャート面の照度は 2000 lx，色温度 3200 K にすること。
- レンズ絞り値は F7.0 以上であること。

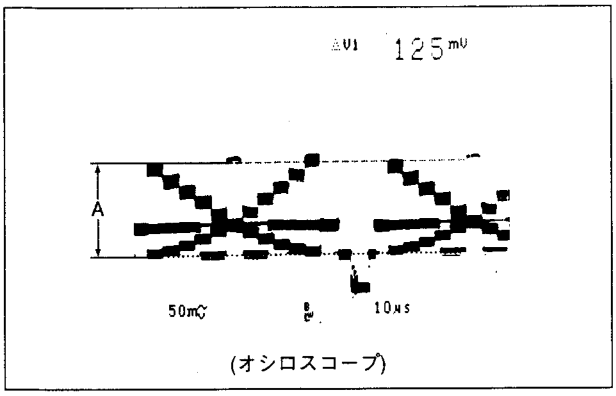
注意事項：
下記のトリマコンデンサは調整が困難ですので絶対に回さないでください。
VA-163 基板　：⊘CT200,⊘CT300,⊘CT400

測定器　：オシロスコープ，波形モニタ
被写体　：グレースケールチャート

準備：
- WHITE BAL スイッチ（サイドパネル）→ PRST
- GAIN スイッチ（サイドパネル）→ L (0dB)
- VA-163 基板を EX-464 にて基板延長する。
- RGB/ENC スイッチ（サイドパネル）→ ENC

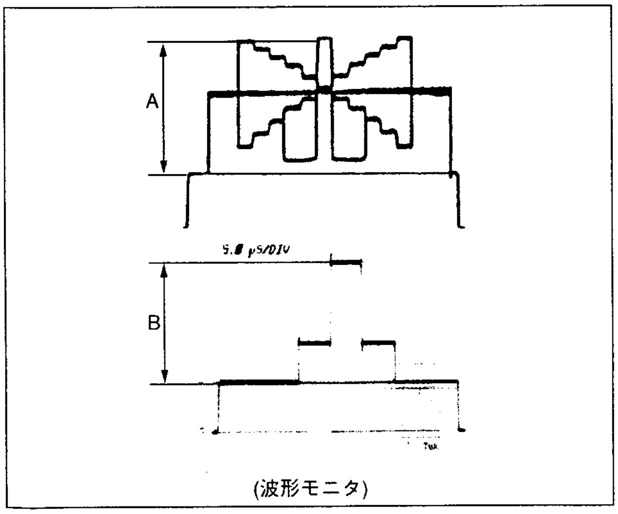
調整手順：
1. MENU SEL スイッチ（フロントパネル）を押しながらDISP スイッチ（サイドパネル）を MENU にする。
2. メニュー設定：
   MENU　：Paint
   PAGE　：Knee/W.Clip (P6)
   ITEM　：Knee → Off
3. レンズ絞り：CLOSE
4. レベル自動調整を実行する。
   MENU　：Operation
   PAGE　：Auto Setup (? 8)
   ITEM　：Level Auto
   (MENU SEL スイッチを押して実行)
5. TEST OUT 端子にてブラックレベルが 5 IRE であることを確認する。
   (規格外であれば 4-2-5. Master Black 調整を行う)

6. 測定点　　: TP72（GND : TP71）/VA-163 延長基板
レンズ絞り : A = 125 mV
（このときレンズ絞り値は F7.0 以上であること）



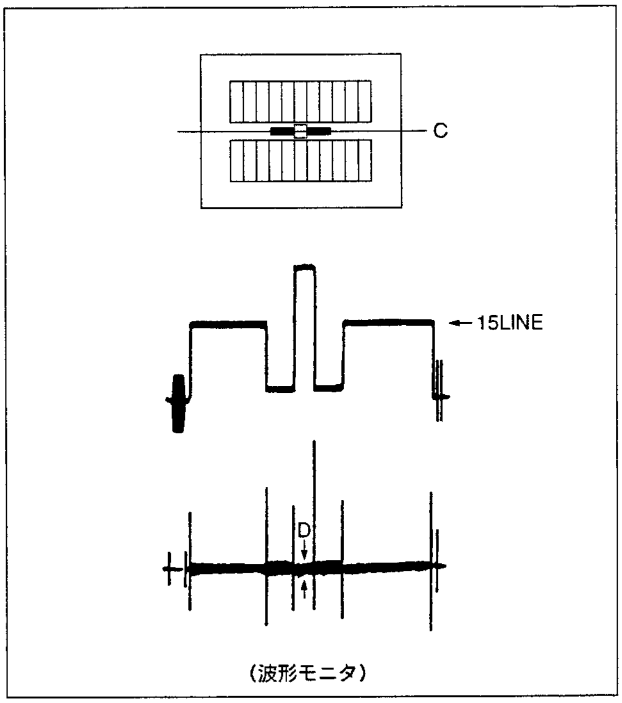
（オシロスコープ）

7. ENC/RGB スイッチ（サイドパネル）→ RGB
R/G/B スイッチ（サイドパネル）→ G
8. VA ゲイン（G）調整
測定点　　: TEST OUT 端子
調整箇所　: ⊘RV300（G GAIN）/VA-163 基板パネル
規格　　　: TEST 波形を 2↔Off の間で切り換えたとき A と B のレベルが等しくなること。A=B
メニュー設定 :
MENU　　: Paint
PAGE　　: Knee/W.Clip（P6）
ITEM　　: Test

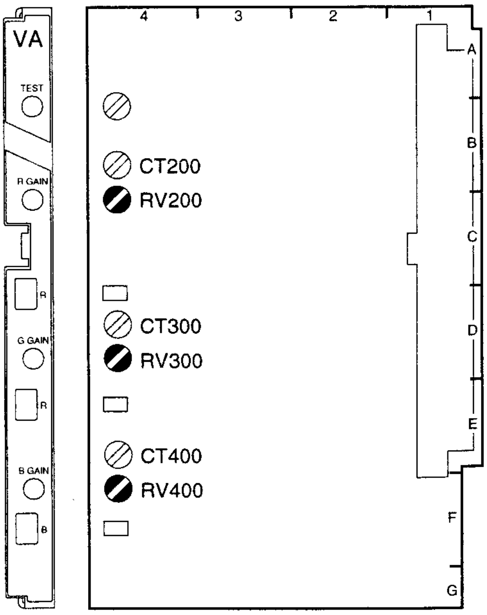


（波形モニタ）

9. メニュー設定 :
MENU　　: Paint
PAGE　　: Knee/W.Clip
ITEM　　: TEST → Off
10. 波形モニタで C の部分を 15 ラインセレクトする。
11. 波形モニタを CHROMA モードにする。
12. RGB/ENC スイッチ（サイドパネル）→ ENC
13. 測定点　: TEST OUT 端子
調整箇所 : ⊘RV200（R GAIN）/VA-163 基板パネル
⊘RV400（B GAIN）/VA-163 基板パネル
規格　　: キャリアリーク D = 最小



（波形モニタ）


VA
TEST
R GAIN
R
G GAIN
R
B GAIN
B
4
3
2
1
A
B
C
D
E
F
G
CT200
RV200
CT300
RV300
CT400
RV400
VA-163 BOARD (A SIDE)

4-2-3. Black Shading 調整

注意事項：
Black Shadingを実行して得た補正データはOHBファイルに保存されません。従ってOHBを交換，もしくは新規に取り付けた場合は必ず本調整を行ってください。
Shading動作が正常に終了しない場合は，ビューファインダまたはMSUに表示されるメッセージを参考にして再度調整をおこなってください。それでも正常に終了しない場合は，サービス担当者にご相談ください。

準備：
- TEST OUT 端子に波形モニタを接続する。
- RGB/ENC スイッチ（サイドパネル）→ENC

測定箇所　：TEST OUT 端子
レンズ絞り：CLOSE

調整手順：
1. MENU SELスイッチ（フロントパネル）を押しながらDISPスイッチ（サイドパネル）をMENUにする。
2. ブラックシェーディング自動調整を実行する。
   メニュー設定：
   MENU　：Maintenance
   PAGE　：Auto Setup（M4）
   ITEM　：Black Shading
   (MENU SEL スイッチを押して実行)
3. ビューファインダ画面もしくはMSUのメニュー操作部に正常終了のメッセージが表示されるのを確認する。エラーメッセージが表示された場合はメッセージを参考に再度調整を行う。

終了時のメッセージと意味

BLACK : OK	：正常終了
LEVEL TOO HIGH	：レンズCLOSEが完全に動作しない場合等
TIME LIMIT	：規定回数でBlack Shadingが終了しなかった
OVER FLOW	：現在値と基準値の差が大きく，調整範囲を越えていたため，調整できなかった

4. 波形モニタにてキャリアレベルが2 IRE以下であることを確認する。

- Manual Black Shading 調整（参考）

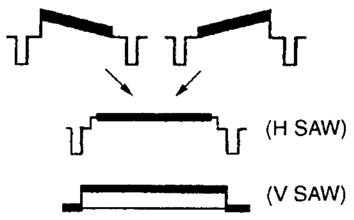
注意事項：
4-2-3. Black Shading調整で補正しきれない場合のみこの調整を行ってください。

測定器　：波形モニタ

準備：
- TEST OUT 端子に波形モニタを接続する。
- GAIN スイッチ（サイドパネル）→H（18 dB）

測定箇所　：TEST OUT 端子
レンズ絞り：CLOSE

調整手順：
1. 波形モニタの設定
   - LUM モード
   - VOLTFULL SCALE レンジ→0.5
2. ENC/RGB スイッチ（サイドパネル）→RGB
   R/G/B スイッチ（サイドパネル）→G
3. MENU SEL スイッチ（フロントパネル）を押しながらDISP スイッチ（サイドパネル）をMENU にする。
4. ブラックレベルを5 IRE に設定
   調整箇所：
   MENU　：Maintenance
   PAGE　：Black Shading　(M3)
   ITEM　：Black M
5. シェーディングがある場合は下記の表に従い波形をフラットにする。
6. R-ch，B-ch についても同様に調整を行う。

	スイッチ	H SAW PAGE : Black Shading (M3)	V SAW PAGE : Black Shading (M3)
R	ENC/RGB→RGB R/G/B→R	ITEM : H Saw [R]	ITEM : V Saw [R]
G	ENC/RGB→RGB R/G/B→G	ITEM : H Saw [G]	ITEM : V Saw [G]
B	ENC/RGB→RGB R/G/B→B	ITEM : H Saw [B]	ITEM : V Saw [B]
TEST OUT 端子			

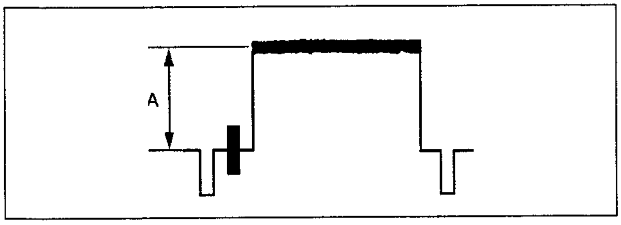
調整終了後の設定：
- ENC/RGB スイッチ（サイドパネル）→ENC
- GAIN スイッチ（サイドパネル）→L（0 dB）

4-2-4. White Shading 調整

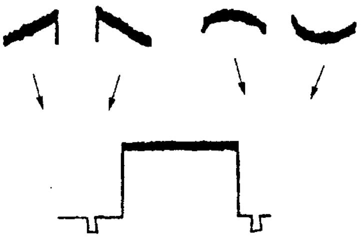
注意事項：
White Shading 調整はパターンのムラや輝度，レンズの絞りやズームの条件が正しくないと適切な調整になりませんのでご注意ください。

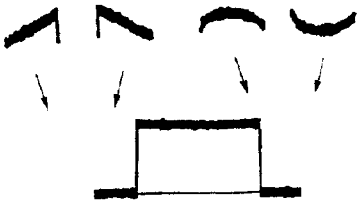
測定器　：波形モニタ
測定箇所　：TEST OUT 端子
被写体　：全面白パターン

準備：
- TEST OUT 端子に波形モニタを接続する。
- ENC/RGB スイッチ（サイドパネル）→ ENC
- MENU SEL スイッチ（フロントパネル）を押しながら DISP スイッチ（サイドパネル）を MENU にする。
  メニュー設定：
  MENU　：Paint
  PAGE　：Knee/W.Clip (P6)
  ITEM　：Knee → Off
- 全面白パターンをアンダースキャン画枠一杯に撮像する。
- レンズ絞り　：A＝80 ±5 IRE



調整手順：
1. WHITE BAL スイッチ（サイドパネル）→ PRST
2. 波形モニタの設定
   - LUM モード
   - VOLTFULL SCALE レンジ→ 0.5
3. ENC/RGB スイッチ（サイドパネル）→ RGB
   R/G/B スイッチ（サイドパネル）→ G
4. シェーディングがある場合は右表に従い波形をフラットにする。
5. R-ch，B-ch についても同様に調整を行う。

	スイッチ	H SAW PAGE : White Shading (M2)	H PARA PAGE : White Shading (M2)
R	ENC/RGB → RGB R/G/B → R	ITEM : H Saw [R]	ITEM : H Para [R]
G	ENC/RGB → RGB R/G/B → G	ITEM : H Saw [G]	ITEM : H Para [G]
B	ENC/RGB → RGB R/G/B → B	ITEM : H Saw [B]	ITEM : H Para [B]
TEST OUT 端子			

	スイッチ	V SAW PAGE : White Shading (M2)	V PARA PAGE : White Shading (M2)
R	ENC/RGB → RGB R/G/B → R	ITEM : V Saw [R]	ITEM : V Para [R]
G	ENC/RGB → RGB R/G/B → G	ITEM : V Saw [G]	ITEM : V Para [G]
B	ENC/RGB → RGB R/G/B → B	ITEM : V Saw [B]	ITEM : V Para [B]
TEST OUT 端子			

ファイルストア：
ファイルストアを実行する。
MENU　：Reference File
PAGE　：Reference File (R1)
ITEM　：File Store
(MENU SEL スイッチを押して実行)

調整終了後の設定：
- ENC/RGB スイッチ（サイドパネル）→ ENC

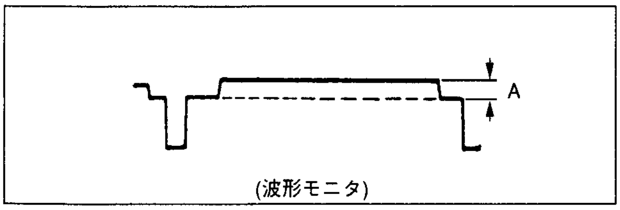
4-2-5. Master Black 調整

測定器　：波形モニタ
測定箇所　：TEST OUT 端子

準備：
- TEST OUT 端子に波形モニタを接続する。
- RGB/ENC スイッチ（サイドパネル）→ RGB
- R/G/B スイッチ（サイドパネル）→ G

レンズ絞り　：CLOSE

調整手順：
1. 波形モニタの設定
   - LUM モード
2. MENU SEL スイッチ（フロントパネル）を押しながら DISP スイッチ（サイドパネル）を MENU にする。
3. 調整箇所：
   MENU　：Paint
   PAGE　：Video Level（P1）
   ITEM　：Black [M]
   規格　：A＝5 ±1 IRE



(波形モニタ)

4. RGB/ENC スイッチ（サイドパネル）→ ENC
5. ブラックバランス調整を実行する。
   AUTO W/B BAL スイッチ（フロントパネル）→ BLK

ファイルストア：
ファイルストアを実行する。
MENU　：Reference File
PAGE　：Reference File（R1）
ITEM　：File Store
(MENU SEL スイッチを押して実行)

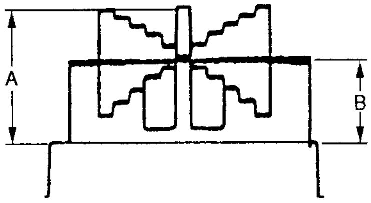
4-2-6. ガンマ補正調整

測定器　：波形モニタ，ベクトルスコープ
測定箇所：TEST OUT 端子
被写体　：グレースケールチャート

準備：
- TEST OUT 端子に波形モニタを接続する。
- 波形モニタの PIX OUT 端子にベクトルスコープを接続する。
- グレースケールチャートをアンダースキャン画枠一杯に撮像する。
- RGB/ENC スイッチ（サイドパネル）→ RGB
- R/G/B スイッチ（サイドパネル）→ G
- MENU SEL スイッチ（フロントパネル）を押しながら DISP スイッチ（サイドパネル）を MENU にする。
  メニュー設定：
  MENU　：Paint
  PAGE　：Gamma (P5)
  ITEM　：Gamma → On
  PAGE　：Knee/W.Clip (P6)
  ITEM　：Knee → Off

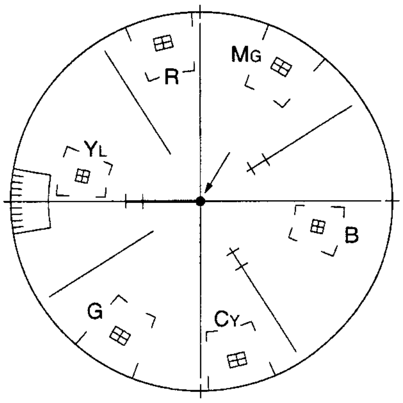
レンズ絞り　：A＝100 ±2 IRE

調整手順：
1. Gamma［マスター］調整
   調整箇所：
   MENU　：Paint
   PAGE　：Video Level (P1)
   ITEM　：Gamma [M]
   規格　：B＝60 ±2 IRE



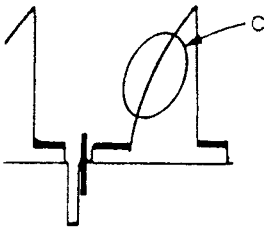
(波形モニタ)

2. レンズ絞り　：CLOSE
3. メニュー設定：
   MENU　：Paint
   PAGE　：Video Level (P1)
   ITEM　：Test → 1
4. RGB/ENC スイッチ（サイドパネル）→ ENC
5. ホワイトバランス自動調整を実行する。
   WHITE BAL スイッチ（サイドパネル）→ A
   AUTO W/B BAL スイッチ（フロントパネル）→ WHT
6. Gamma [R] 調整
   調整箇所：
   MENU　：Paint
   PAGE　：Video Level (P1)
   ITEM　：Gamma [R]
   規格　：ベクトルスコープの輝点を中心に近づける。
7. Gamma [B] 調整
   調整箇所：
   MENU　：Paint
   PAGE　：Video Level (P1)
   ITEM　：Gamma [B]
   規格　：ベクトルスコープの輝点を中心に近づける。
8. 手順6，7を交互に繰り返し，輝点を最小にする。



(ベクトルスコープ)

9. 波形モニタでC部のキャリアリークが無いことを確認する。
   規格　：C＝最小



(波形モニタ)

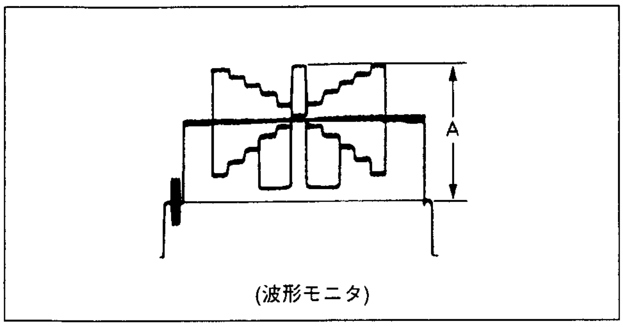
調整終了後の設定：
- メニュー設定：
  MENU　：Paint
  PAGE　：Video Level (P1)
  ITEM　：Test → Off
- WHITE BAL スイッチ（サイドパネル）→ PRST

4-2-7. フレア調整

測定器　：波形モニタ
測定箇所：TEST OUT端子
被写体　：グレースケールチャート

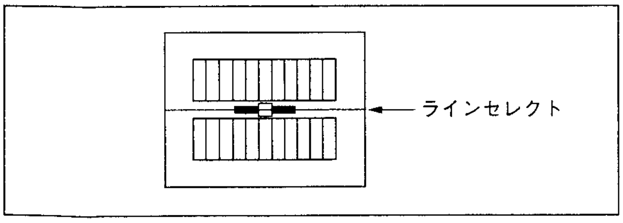
準備：
- TEST OUT端子に波形モニタを接続する。
- グレースケールチャートをアンダースキャン画枠一杯に撮像する。
- RGB/ENCスイッチ（サイドパネル）→ENC
- MENU SELスイッチ（フロントパネル）を押しながらDISPスイッチ（サイドパネル）をMENUにする。
  メニュー設定：
  MENU　：Paint
  PAGE　：Knee/W.Clip (P6)
  ITEM　：Knee→Off

レンズ絞り　：A＝100 ±2 IRE

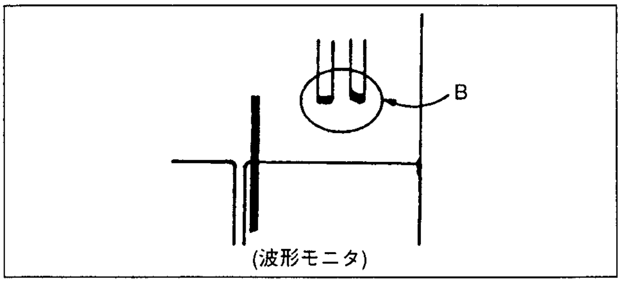


(波形モニタ)

調整手順：
1. ホワイトバランス自動調整を実行する。
   WHITE BALスイッチ（サイドパネル）→A
   AUTO W/B BALスイッチ（フロントパネル）→WHT
2. レンズ絞りを基準値（A＝100 ±2 IRE）より2絞り開ける。
3. RGB/ENCスイッチ（サイドパネル）→RGB
   R/G/Bスイッチ（サイドパネル）→G
4. モニタ画面の中央部に波形モニタの15LINE SELECTを合わせる。



5. FlareをON/OFFしてもB部のレベルが変動しないことを確認する。変動する場合はFlareをONにし，Flare [G] にて調整する。
   メニュー設定：
   MENU　：Paint
   PAGE　：Video Level (P1)
   ITEM　：Flare→On/Off
   調整箇所：
   ITEM　：Flare [G]
6. RGB/ENCスイッチ（サイドパネル）→ENC
7. Flare [R] 調整
   調整箇所：
   MENU　：Paint
   PAGE　：Video Level (P1)
   ITEM　：Flare [R]
   規格　：キャリアリークを最小
8. Flare [B] 調整
   調整箇所：
   MENU　：Paint
   PAGE　：Video Level (P1)
   ITEM　：Flare [B]
   規格　：キャリアリークを最小



(波形モニタ)

9. 手順7,8を交互に繰り返し，キャリアリークを最小にする。

ファイルストア：
ファイルストアを実行する。
MENU　：Reference File
PAGE　：Reference File (R1)
ITEM　：File Store
(MENU SELスイッチを押して実行)

調整終了後の設定：
- WHITE BALスイッチ（サイドパネル）→PRST

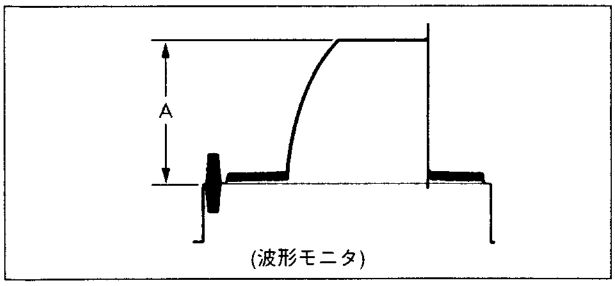
4-2-8. ニー，ホワイトクリップ調整

注意事項：
本調整はカスタマーの必要に応じて行ってください。

測定器　：波形モニタ
測定箇所　：TEST OUT 端子

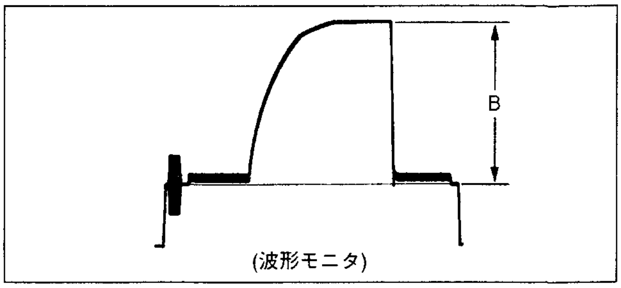
準備：
- TEST OUT 端子に波形モニタを接続する。
- OUTPUT/DCC スイッチ（サイドパネル）→ CAM/OFF
- RGB/ENC スイッチ（サイドパネル）→ ENC
- WHITE BAL スイッチ（サイドパネル）→ PRST
- GAIN スイッチ（サイドパネル）→ M (9dB)

調整手順：
1. ブラックレベルが 5 IRE であることを確認する。
2. MENU SEL スイッチ（フロントパネル）を押しながら DISP スイッチ（サイドパネル）を MENU にする。
3. ニーポイント調整
   メニュー設定：
   MENU　：Paint
   PAGE　：Knee/W.Clip (P6)
   ITEM　：Test → 1
   ITEM　：White Clip → Off
   ITEM　：Knee → On
   ITEM　：Knee Max → On
   調整箇所：
   ITEM　：Point
   規格　：A = 98 ± 2 IRE



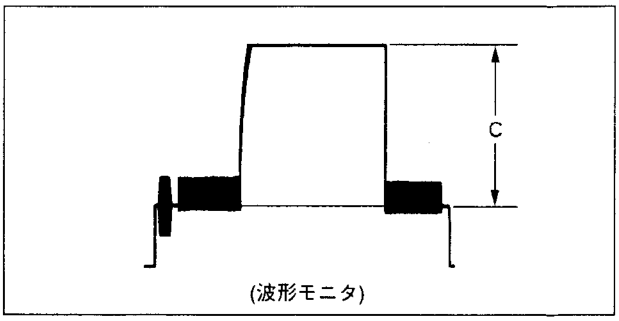
(波形モニタ)

4. ニースロープ調整
   メニュー設定：
   MENU　：Paint
   PAGE　：Knee/W.Clip (P6)
   ITEM　：Knee Max → Off
   調整箇所：
   ITEM　：Slope
   規格　：B = 109 ± 2 IRE



(波形モニタ)

5. GAIN スイッチ（サイドパネル）→ H (18dB)
6. ホワイトクリップ調整
   メニュー設定：
   MENU　：Paint
   PAGE　：Knee/W.Clip (P6)
   ITEM　：White Clip → On
   調整箇所：
   ITEM　：White Clip
   規格　：C = 109 ± 2 IRE



(波形モニタ)

調整終了後の設定：
- メニュー設定：
  MENU　：Paint
  PAGE　：Knee/W.Clip (P6)
  ITEM　：Test → Off
- GAIN スイッチ（サイドパネル）→ L (0dB)

注意事項：
上記の調整はホワイトクリップレベルを 109 IRE に設定した場合の調整値です。109 IRE 以外で使用したい場合は下記の表に基づいて KNEE POINT，KNEE SLOPE，WHITE CLIP LEVEL を合わせてください。

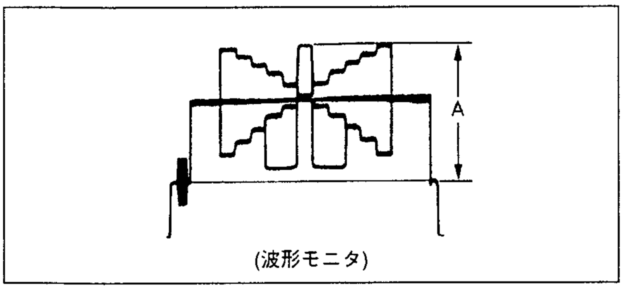
	ホワイトクリップレベル（単位：IRE）			
	109	107	105	103
KNEE POINT	98	98	96	96
KNEE SLOPE	109	109	107	107
WHITE CLIP	109	107	105	103

4-2-9. Crispening調整

注意事項：
本調整はカスタマーの必要に応じて行ってください。

測定器　：波形モニタ
測定箇所：TEST OUT端子
被写体　：グレースケールチャート
準備：
- TEST OUT端子に波形モニタを接続する。
- グレースケールチャートをアンダースキャン画枠一杯に撮像する。
- RGB/ENCスイッチ（サイドパネル）→ENC
- MENU SELスイッチ（フロントパネル）を押しながらDISPスイッチ（サイドパネル）をMENUにする。
  メニュー設定：
  MENU　：Paint
  PAGE　：Detail 1 (P2)
  ITEM　：Detail → On

レンズ絞り　：A = 90 ± 2 IRE



(波形モニタ)

調整箇所：
MENU　：Paint
PAGE　：Detail 1 (P2)
ITEM　：Crispening
規格　：MENU SELスイッチ（フロントパネル）にて，いったん-99まで回す。そして，徐々にプラス方向に回していき，波形の黒レベルの部分のノイズが丁度減少し始める点になるように調整する。または，適当なクリスプニングレベルになるように調整する。

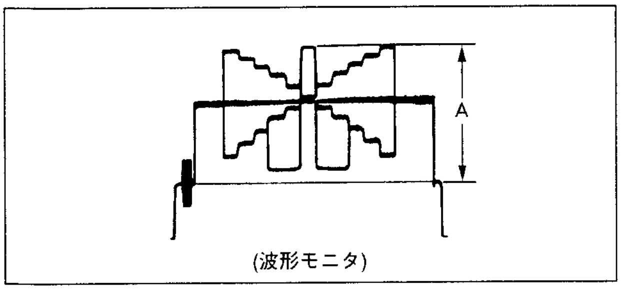
4-2-10. レベルディペンデント調整

注意事項：
本調整はカスタマーの必要に応じて行ってください。

測定器　：波形モニタ
測定箇所　：TEST OUT 端子
被写体　：グレースケールチャート

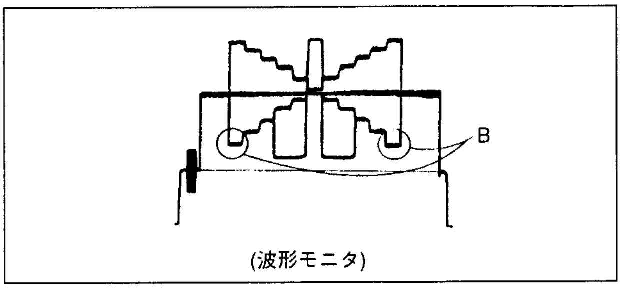
準備：
- TEST OUT 端子に波形モニタを接続する。
- グレースケールチャートをアンダースキャン画枠一杯に撮像する。
- RGB/ENC スイッチ（サイドパネル）→ ENC
- MENU SEL スイッチ（フロントパネル）を押しながら DISP スイッチ（サイドパネル）を MENU にする。
  メニュー設定：
  MENU　：Paint
  PAGE　：Detail 1（P2）
  ITEM　：Detail → On
  ITEM　：Level Dep. → On

調整手順：
1. レンズ絞り　：A = 90 ± 2 IRE



(波形モニタ)

2. 調整箇所：
MENU　：Paint
PAGE　：Detail 1（P2）
ITEM　：Level Dep.
規格　：MENU SEL スイッチ（フロントパネル）にて，いったん -99 まで回す。そして，ゆっくりプラス方向に回していき，B 部分のヒゲが丁度減少し始める点の手前になるように調整する。



(波形モニタ)

注意事項：
本調整後，4-2-12. H/V Ratio 調整，4-2-13. Detail レベル調整を必ずおこなってください。

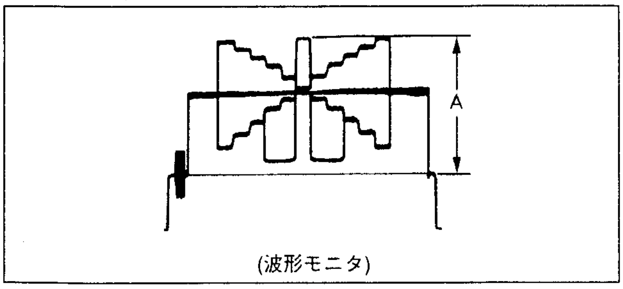
4-2-11.Detail Frequency 調整

注意事項：
本調整はカスタマーの必要に応じて行ってください。

測定器　：波形モニタ
測定箇所：TEST OUT端子
被写体　：グレースケールチャート

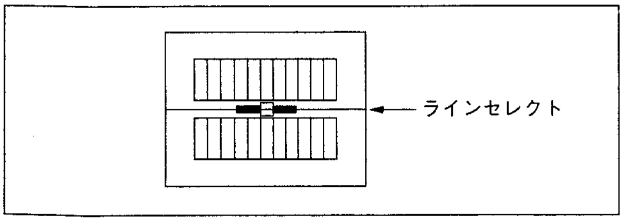
準備：
- TEST OUT端子に波形モニタを接続する。
- グレースケールチャートをアンダースキャン画枠一杯に撮像する。
- RGB/ENCスイッチ（サイドパネル）→ENC
- MENU SELスイッチ（フロントパネル）を押しながらDISPスイッチ（サイドパネル）をMENUにする。
  メニュー設定：
  MENU　：Paint
  PAGE　：Detail 2（P3）
  ITEM　：Detail → On
  PAGE　：Knee/W.Clip（P6）
  ITEM　：Knee → Off

調整手順：
1. レンズ絞り　：A＝90 ±2 IRE

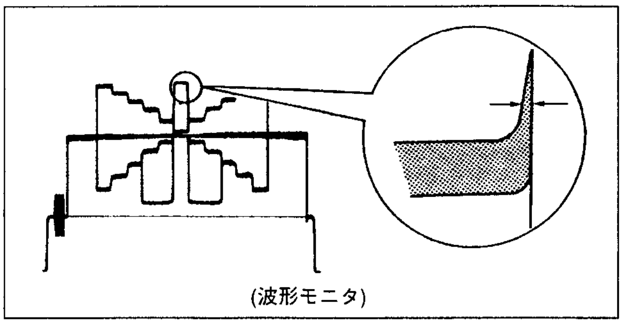


(波形モニタ)

2. グレースケールチャートの中央白部分をラインセレクトする。



3. 調整箇所：
   MENU　：Paint
   PAGE　：Detail 2（P3）
   ITEM　：Frequency
   規格　：MENU SELスイッチ（フロントパネル）にて中央白部の左右両端のedge幅を好みの幅にする。


(波形モニタ)

注意事項：
本調整後，4-2-12. H/V Ratio調整，4-2-13. Detailレベル調整を必ずおこなってください。

4-2-12. H/V Ratio 調整

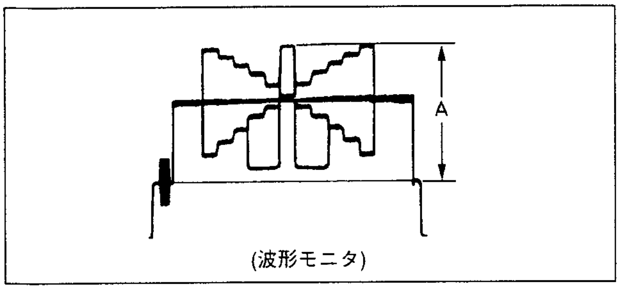
注意事項：
本調整はカスタマーの必要に応じて行ってください。

測定器　：波形モニタ
測定箇所：TEST OUT 端子
被写体　：グレースケールチャート

準備：
- TEST OUT 端子に波形モニタを接続する。
- グレースケールチャートをアンダースキャン画枠一杯に撮像する。
- RGB/ENC スイッチ（サイドパネル）→ ENC
- MENU SEL スイッチ（フロントパネル）を押しながら DISP スイッチ（サイドパネル）を MENU にする。

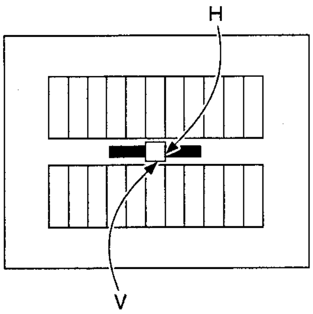
  メニュー設定：
  MENU　：Paint
  PAGE　：Detail 2 (P3)
  ITEM　：Detail → On
  PAGE　：Knee/W.Clip (P6)
  ITEM　：Knee → Off

調整手順：
1. レンズ絞り　：A = 90 ±2 IRE



(波形モニタ)

2. 調整箇所：
   MENU　：Paint
   PAGE　：Detail 2 (P3)
   ITEM　：H/V Ratio
   規格　：MENU SEL スイッチ（フロントパネル）にて水平方向と垂直方向に付加されるディティール信号（白側）の割合を等しくする。



(モニタ画面)

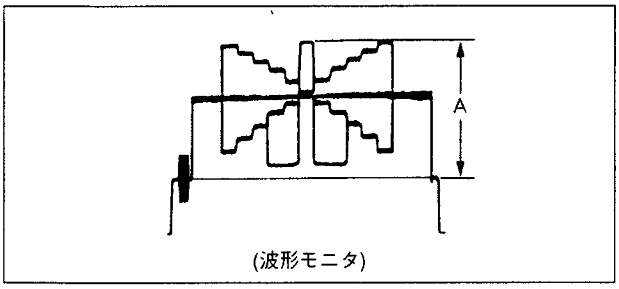
4-2-13. Detail レベル調整

注意事項：
本調整はカスタマーの必要に応じて行ってください。

測定器　：波形モニタ
測定箇所：TEST OUT 端子
被写体　：グレースケールチャート

準備：
- TEST OUT 端子に波形モニタを接続する。
- グレースケールチャートをアンダースキャン画枠一杯に撮像する。
- RGB/ENC スイッチ（サイドパネル）→ ENC
- MENU SEL スイッチ（フロントパネル）を押しながら DISP スイッチ（サイドパネル）を MENU にする。
  メニュー設定：
  MENU　：Paint
  PAGE　：Detail 1 (P2)
  ITEM　：Detail → On

調整手順：
1. レンズ絞り　：A = 90 ± 2 IRE



(波形モニタ)

2. 調整箇所：
   MENU　：Paint
   PAGE　：Detail 1 (P2)
   ITEM　：Level
   規格　：階段部に付加されるディティールをカスタマーの好みのレベルに設定する。

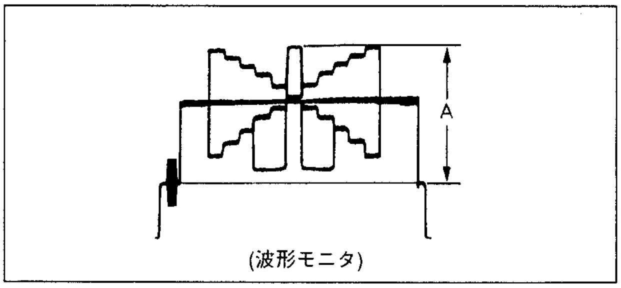
4-2-14. Detail Clip 調整

注意事項：
本調整はカスタマーの必要に応じて行ってください。

測定器　：波形モニタ
測定箇所：TEST OUT 端子
被写体　：グレースケールチャート

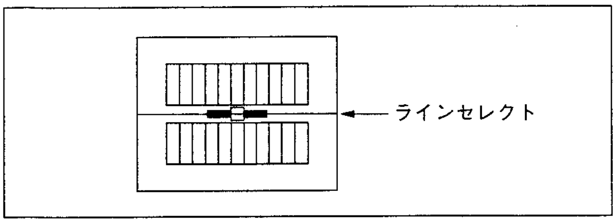
準備：
- TEST OUT 端子に波形モニタを接続する。
- グレースケールチャートをアンダースキャン画枠一杯に撮像する。
- RGB/ENC スイッチ（サイドパネル）→ ENC
- MENU SEL スイッチ（フロントパネル）を押しながら DISP スイッチ（サイドパネル）を MENU にする。
  メニュー設定：
  MENU　：Paint
  PAGE　：Detail 2 (P3)
  ITEM　：Detail → On
  PAGE　：Knee/W.Clip (P6)
  ITEM　：Knee → Off

調整手順：
1. レンズ絞り　：A = 90 ± 2 IRE



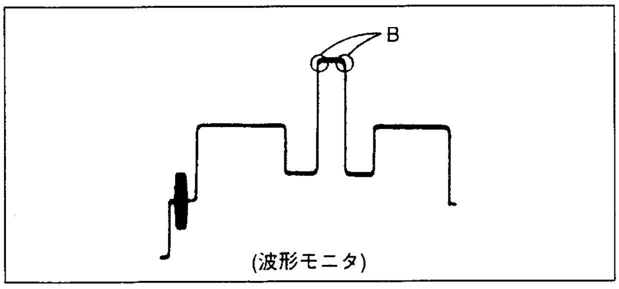
(波形モニタ)

2. 波形モニタのラインセレクトをグレースケールチャートの中央白の中央部に合わせる。



3. ホワイトリミッター調整

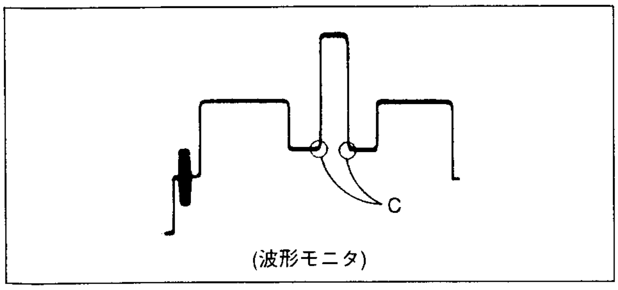
調整箇所 :
MENU : Paint
PAGE : Detail 2 (P3)
ITEM : W.Limitter
規格 : B部のedgeをカスタマーの好みのクリップレベルに設定する。



(波形モニタ)

4. ブラックリミッター調整

調整箇所 :
MENU : Paint
PAGE : Detail 2 (P3)
ITEM : B.Limitter
規格 : C部のedgeをカスタマーの好みのクリップレベルに設定する。



(波形モニタ)

4-2-15. Skin Tone 調整

注意事項 :
本調整はカスタマーの必要に応じて行ってください。

測定器 : カラーモニタ, ビューファインダ, ベクトルスコープのいずれか

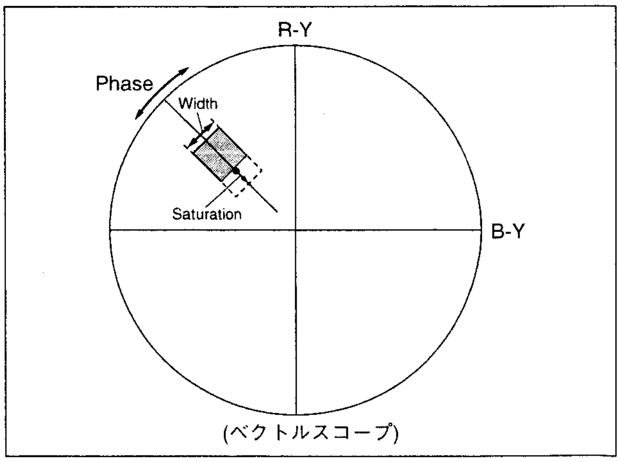
準備 :

- TEST OUT 端子にベクトルスコープを接続する。
- 人物の顔面を撮影する。
- MENU SEL スイッチ (フロントパネル) を押しながら DISP スイッチ (サイドパネル) を MENU にする。
  メニュー設定 :
  MENU : Paint
  PAGE : Skin Detail (P4)
  ITEM : Skin Detail → On
  ITEM : Gate → On

調整手順 :
設定メニューの下記の項目にて, Skin Detailをカスタマーの好みに合わせて設定する。

調整箇所 :
MENU : Paint
PAGE : Skin Detail (P4)
ITEM : Level : スキンゲート内のディテール量
ITEM : Phase : 色相
ITEM : Saturation : 飽和度方向の成分
ITEM : Width : 色相方向の成分

(ビューファインダにはSkin Detailの効く範囲がゼブラパターンとして表示されるので, カスタマーの好みに合わせて設定する。)



(ベクトルスコープ)

調整終了後の設定 :
MENU : Paint
PAGE : Skin Detail (P4)
ITEM : Gate → Off

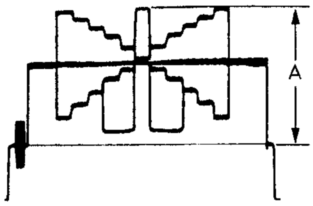
4-2-16. ゼブラ調整

注意事項：
本調整はカスタマーの必要に応じて行ってください。

測定器　：波形モニタ
測定箇所　：TEST OUT端子
被写体　：グレースケールチャート

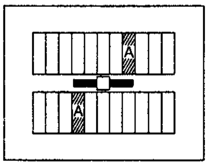
準備：
- TEST OUT端子に波形モニタを接続する。
- RGB/ENCスイッチ（サイドパネル）→ENC
- ZEBRAスイッチ（ビューファインダ）→ON
- グレースケールチャートをアンダースキャン画枠一杯に撮像する。
- MENU SELスイッチ（フロントパネル）を押しながらDISPスイッチ（サイドパネル）をMENUにする。
  メニュー設定：
  MENU　：Paint
  PAGE　：Knee/W.Clip　(P6)
  ITEM　：Knee → Off

調整手順：
1. ホワイトバランス自動調整を実行する。
   WHITE BALスイッチ（サイドパネル）→A
   AUTO W/B BALスイッチ（フロントパネル）→WHT
2. レンズ絞り　：A＝100 ±2 IRE



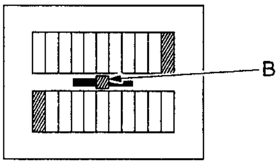
(波形モニタ)

3. メニュー設定：
   MENU　：System config
   PAGE　：Pre knee/Zebra　(S4)
   ITEM　：Z.Disp → 1
   調整箇所：
   ITEM　：Zebra1　[LEVEL]
   規格　：MENU SELスイッチ（フロントパネル）にて縞模様がビューファインダ画面のA部の中心に現れるように調整する。
   (ITEM : Zebla1　[RANGE] にて縞模様の範囲を変更することができます。)



(ビューファインダ画面)

4. メニュー設定：
   MENU　：System config
   PAGE　：Pre knee/Zebra　(S4)
   ITEM　：Z.Disp → 2
   調整箇所：
   ITEM　：Zebra2　[LEVEL]
   規格　：MENU SELスイッチ（フロントパネル）にて縞模様がビューファインダ画面のB部の中心に現れ始めるように調整する。



(ビューファインダ画面)

調整終了後の設定：
- ZEBRAスイッチ（ビューファインダ）→OFF
- WHITE BALスイッチ（サイドパネル）→PRST

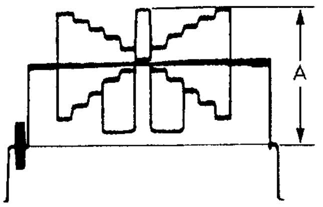
4-2-17. オートアイリス調整

注意事項：
本調整はカスタマーの必要に応じて行ってください。

測定器　：波形モニタ
測定箇所：TEST OUT端子
被写体　：グレースケールチャート

準備：
- AUTO/MANUスイッチ（レンズ）→AUTO
- TEST OUT端子に波形モニタを接続する。
- RGB/ENCスイッチ（サイドパネル）→ENC
- グレースケールチャートをアンダースキャン画枠一杯に撮像する。
- MENU SELスイッチ（フロントパネル）を押しながらDISPスイッチ（サイドパネル）をMENUにする。
  メニュー設定：
  MENU　：Paint
  PAGE　：Knee/W.Clip（P6）
  ITEM　：Knee→Off

調整手順：
1. ホワイトバランス自動調整を実行する。
   WHITE BALスイッチ（サイドパネル）→A
   AUTO W/B BALスイッチ（フロントパネル）→WHT
2. APL Ratio調整
   調整箇所：
   MENU　：Operation
   PAGE　：Auto Iris/Auto Knee（?6）
   ITEM　：APL Ratio
   規格　：用途に応じ，オートアイリスの動作モードを設定する。(ビデオ信号の平均値による動作からピーク値による動作までの間に設定できる。)
   99→平均値
   −99→ピーク値
3. オートアイリスレベル調整
   メニュー設定：
   MENU　：Operation
   PAGE　：Auto Iris/Auto Knee（?6）
   ITEM　：Iris Override→Off
   調整箇所：
   MENU　：System config
   PAGE　：Iris（S6）
   ITEM　：Level
   規格　：A＝100 ±2 IRE



(波形モニタ)

調整終了後の設定：
- WHITE BALスイッチ（サイドパネル）→PRST

4-2-18. 調整終了後のメニュー設定

MENU　: Paint
PAGE　: Detail 1 (P2)
ITEM　: Detail → On
PAGE　: Gamma (P5)
ITEM　: Gamma → On
PAGE　: Knee/W.Clip (P6)
ITEM　: Knee → On

4-2-19. ファイルストア

4-2-1から4-2-17項までの調整を行った後はリファレンスファイルストアおよびトリミングファイルストアを必ず実行してください。

手順：

1. MENU SELスイッチ（フロントパネル）を押しながら，DISPスイッチ（サイドパネル）をMENUにする。
2. リファレンスファイルストアを実行する。
   メニュー設定：
   MENU　: Reference File
   PAGE　: Reference File (R1)
   ITEM　: File Store
   (MENU SELスイッチを押して実行)
3. トリミングファイルストアを実行する。
   メニュー設定：
   MENU　: Triming File
   PAGE　: Triming File (T1)
   ITEM　: File Store
   (MENU SELスイッチを押して実行)

4-3. 電気総合調整

この調整を始める前に必ず4-1-5. 初期セッティングを行ってください。基板の交換または修理を行った場合は，下記の手順で補正データのプリセットを行ってください。プリセットを行うとビデオ系，ディテール系の調整データはすべてクリアされますので，4-3-1項から4-3-23項まで必ずすべての調整を行ってください。

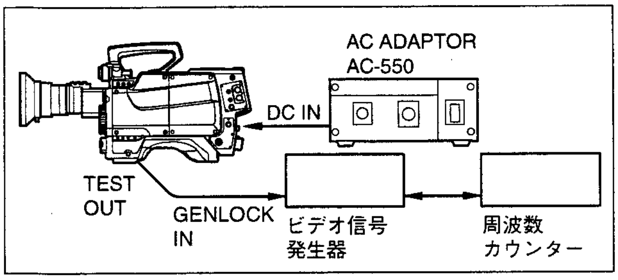
(1) リファレンスファイルクリアを実行する。
   メニュー設定：
   MENU　: Reference File
   PAGE　: Reference File (R1)
   ITEM　: Clear File
   (MENU SELスイッチを押して実行)
(2) シーンファイルスタンダードを実行する。
   MENU　: Paint
   PAGE　: Scene File (P8)
   ITEM　: Standard
   (MENU SELスイッチを押して実行)

この章では各調整項目ごとにファイルストア(リファレンスまたはトリミングファイル)を行う指示をしています。これは基板延長などで電源を切ったとき，設定データがクリアされることを防ぐためです。
ただし，電源を切らない限り設定データは保持されていますので，各項目ごとにファイルストアをする必要はなく，まとめて行うこともできます。

4-3-1. VCO CONT 周波数調整

注意事項：
通電後10分以上経ってから測定してください。

測定器　：周波数カウンタ，ビデオ信号発生器
測定箇所　：TEST OUT 端子
準備　：RGB/ENC スイッチ（サイドパネル）→ENC



調整手順：
1. MENU SEL スイッチ（フロントパネル）を押しながら DISP スイッチ（サイドパネル）を MENU にする。
2. メニュー設定：
   MENU　：System config
   PAGE　：Y/Chroma（S2）
   ITEM　：SC FREQ
   規格　：3,579,545 ± 10 Hz

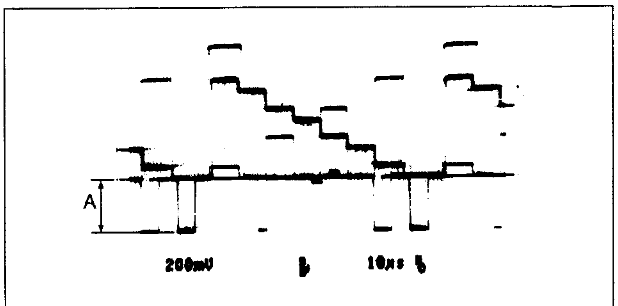
ファイルストア：
OHB ファイルストアを実行する。
MENU　：Triming File
PAGE　：OHB File（T2）
ITEM　：File Store
(MENU SEL スイッチを押して実行)

4-3-2. VTR Y調整

測定器　：オシロスコープ
測定箇所　：TP3（Y）/DA-88 基板パネル

準備：
- OUTPUT/DCC スイッチ（サイドパネル）→BARS
- RGB/ENC スイッチ（サイドパネル）→ENC
- WHITE BAL スイッチ（サイドパネル）→PRST

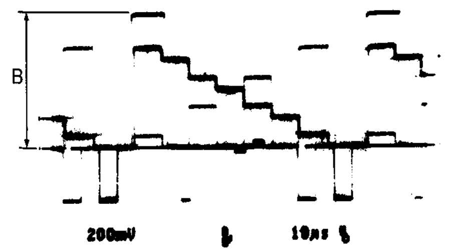
調整手順：
1. MENU SEL スイッチ（フロントパネル）を押しながら DISP スイッチ（サイドパネル）を MENU にする。
2. 調整箇所：
   MENU　：System config
   PAGE　：Y/Chroma（S2）
   ITEM　：Y SYNC
   規格　：A = 286 ± 2 mV



(オシロスコープ)

(20MHz B/W LIMIT → ON)

3. 調整箇所：
   MENU　: System config
   PAGE　: Y/Chroma (S2)
   ITEM　: Y Video
   規格　: B = 714 ± 7 mV



(オシロスコープ)

(20MHz B/W LIMIT → ON)

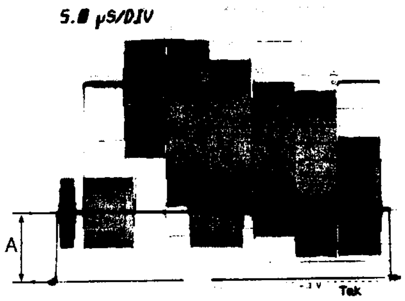
ファイルストア：
ファイルストアを実行する。
MENU　: Triming File
PAGE　: Triming File (T1)
ITEM　: File Store
(MENU SEL スイッチを押して実行)

4-3-3. Test Out 調整

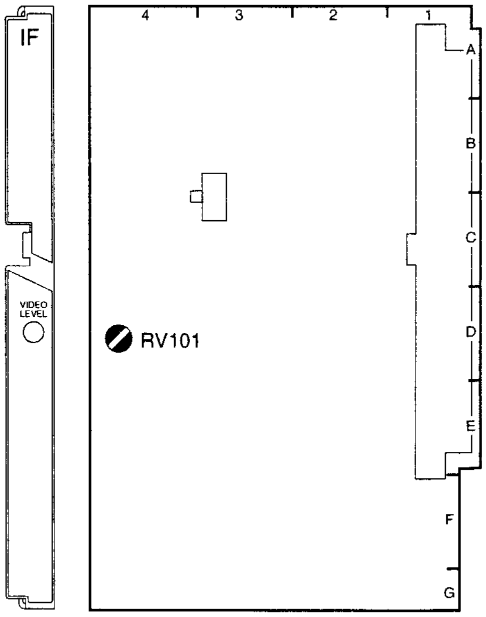
測定器　: 波形モニタ
測定箇所　: TEST OUT 端子

準備：
- TEST OUT 端子に波形モニタを接続する。
- OUTPUT/DCC スイッチ（サイドパネル）→ BARS
- RGB/ENC スイッチ（サイドパネル）→ ENC

調整手順：
1. 調整箇所　: ⊘RV101 (VIDEO LEVEL) /IF-510 基板パネル
   規格　: A = 40 ± 1 IRE



(波形モニタ)



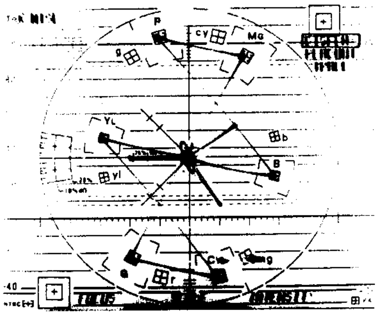
IF-510 BOARD (A SIDE)

4-3-4. クロマ調整

測定器　：波形モニタ，ベクトルスコープ
測定箇所　：TEST OUT 端子

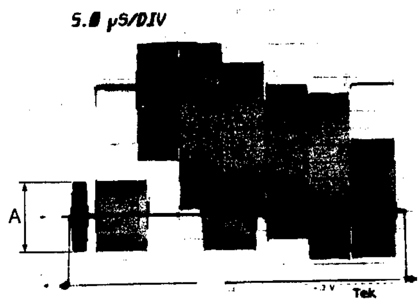
準備：
- TEST OUT 端子にベクトルスコープを接続する。
- OUTPUT/DCC スイッチ（サイドパネル）→ BARS
- RGB/ENC スイッチ（サイドパネル）→ ENC

調整手順：
1. MENU SEL スイッチ（フロントパネル）を押しながら DISP スイッチ（サイドパネル）を MENU にする。
2. 調整箇所：
   MENU　：System config
   PAGE　：Y/CHROMA (S2)
   ITEM　：Chroma LVL
   ITEM　：Q/V LVL
   規格　：クロマレベルと Q/V レベルを交互に調整し，各色の輝点がベクトルスコープの田の中心に位置すること。



(ベクトルスコープ)

3. TEST OUT 端子に波形モニタを接続する。
4. 調整箇所：
   MENU　：System config
   PAGE　：Y/CHROMA (S2)
   ITEM　：Burst LVL
   規格　：A = 40 ± 1 IRE



(波形モニタ)

ファイルストア：
ファイルストアを実行する。
MENU　：Triming File
PAGE　：Triming File (T1)
ITEM　：File Store
(MENU SEL スイッチを押して実行)

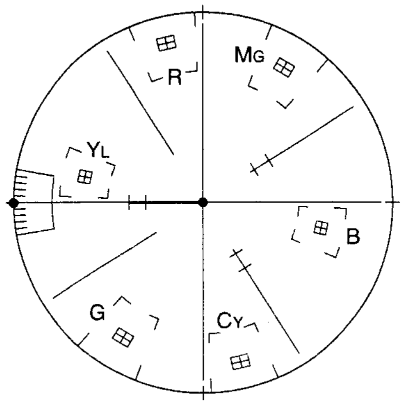
4-3-5. INT SC Phase 調整

注意事項：
この調整は，ソニーテクトロニクス社製1750型を用いた場合を想定して書かれています。
もし他の位相測定器を用いる場合は，その取扱説明書をお読みください。

測定器　：ベクトルスコープ（SC-H 位相測定モード）
測定箇所　：TEST OUT 端子

準備：
- TEST OUT 端子にベクトルスコープを接続する。
- OUTPUT/DCC スイッチ（サイドパネル）→ BARS
- RGB/ENC スイッチ（サイドパネル）→ ENC

調整手順：
1. MENU SEL スイッチ（フロントパネル）を押しながら DISP スイッチ（サイドパネル）を MENU にする。
2. 調整箇所：
   MENU　：System config
   PAGE　：Y/Chroma（S2）
   ITEM　：SC-H Phase
   規格　：バースト（SC）の輝点とHの輝点のベクトルを合わせる。



（ベクトルスコープ）

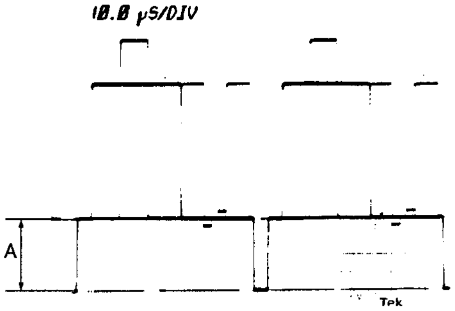
ファイルストア：
ファイルストアを実行する。
MENU　：Triming File
PAGE　：Triming File（T1）
ITEM　：File Store
（MENU SEL スイッチを押して実行）

4-3-6. REG レベル調整

測定器　：波形モニタ
測定箇所　：TEST OUT 端子

準備：
- TEST OUT 端子に波形モニタを接続する。
- OUTPUT/DCC スイッチ（サイドパネル）→ BARS
- RGB/ENC スイッチ（サイドパネル）→ RGB
- R/G/B スイッチ（サイドパネル）→ G

調整手順：
1. MENU SEL スイッチ（フロントパネル）を押しながら DISP スイッチ（サイドパネル）を MENU にする。
2. 調整箇所：
   MENU　：System config
   PAGE　：Y/CHROMA（S2）
   ITEM　：REG LVL
   規格　：SYNC Level A = 40 ± 1 IRE



（波形モニタ）

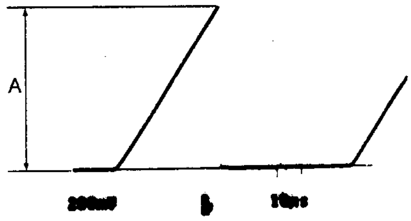
ファイルストア：
ファイルストアを実行する。
MENU　：Triming File
PAGE　：Triming File（T1）
ITEM　：File Store
（MENU SEL スイッチを押して実行）

4-3-7. TEST 1 調整

測定器　：オシロスコープ

準備：
- VA-163 基板を EX-464 にて基板延長する。

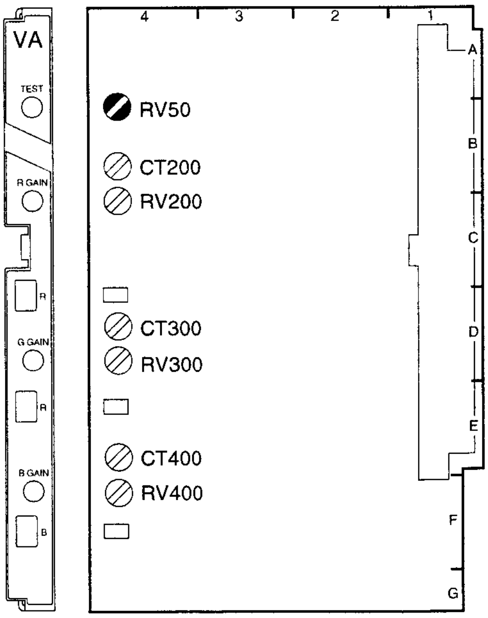
調整手順：
1. WHITE BAL スイッチ（サイドパネル）→ PRST
2. MENU SEL スイッチ（フロントパネル）を押しながら DISP スイッチ（サイドパネル）を MENU にする。
3. メニュー設定：
   MENU　：System config
   PAGE　：PR/VA/TEST（S3）
   ITEM　：Test → 1
4. G 信号調整
   測定点　：TP52（GND：GND（A））/VA-163 延長基板
   調整箇所　：⊘RV50（TEST）/VA-163 基板パネル
   規格　：A = 880 ± 2 mV



(オシロスコープ)

5. R ホワイトレベル調整
   測定点　：TP54（GND：GND（A））/VA-163 延長基板
   調整箇所：
   MENU　：Paint
   PAGE　：Video Level（P1）
   ITEM　：White［R］
   規格　：A = 880 ± 40 mV
6. B ホワイトレベル調整
   測定点　：TP50（GND：GND（A））/VA-163 延長基板
   調整箇所：
   MENU　：Paint
   PAGE　：Video Level（P1）
   ITEM　：White［B］
   規格　：A = 880 ± 40 mV

調整終了後の設定：
MENU　：System config
PAGE　：PR/VA/TEST（S3）
ITEM　：Test → Off


VA
TEST
R GAIN
R
G GAIN
R
B GAIN
B
4
3
2
1
A
B
C
D
E
F
G
RV50
CT200
RV200
CT300
RV300
CT400
RV400

VA-163 BOARD (A SIDE)

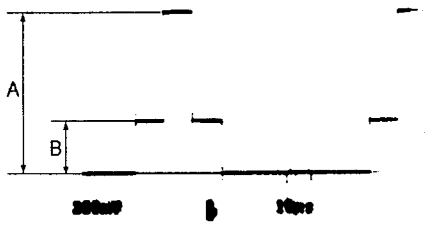
4-3-8. TEST 2 調整

測定器　：オシロスコープ
測定箇所　：TP52 (GND：GND (A)) /VA-163 延長基板

準備：
- VA-163 基板を EX-464 にて基板延長する。

調整手順：
1. MENU SEL スイッチ (フロントパネル) を押しながら DISP スイッチ (サイドパネル) を MENU にする。
2. メニュー設定：
   MENU　：System config
   PAGE　：PR/VA/TEST (S3)
   ITEM　：Test → 2
3. TEST2 HIGH レベル調整
   調整箇所：
   MENU　：System config
   PAGE　：PR/VA/TEST (S3)
   ITEM　：TEST2 HI
   規格　：A = 880 ± 5 mV

4. TEST2 MID レベル調整
   調整箇所：
   MENU　：System config
   PAGE　：PR/VA/TEST (S3)
   ITEM　：TEST2 MID
   規格　：B = 290 ± 5 mV



(オシロスコープ)

ファイルストア：
ファイルストアを実行する。
MENU　：Triming File
PAGE　：Triming File (T1)
ITEM　：File Store
(MENU SEL スイッチを押して実行)

調整終了後の設定：
MENU　：System config
PAGE　：PR/VA/TEST (S3)
ITEM　：Test → Off

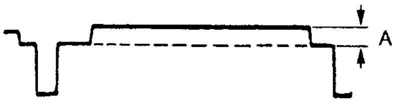
4-3-9. A/D Gain 調整

測定器　：波形モニタ
測定箇所　：TEST OUT 端子

準備：
- TEST OUT 端子に波形モニタを接続する。
- GAIN スイッチ (サイドパネル) → L (0dB)
- ENC/RGB スイッチ (サイドパネル) → RGB
- R/G/B スイッチ (サイドパネル) → G
- MENU SEL スイッチ (フロントパネル) を押しながら DISP スイッチ (サイドパネル) を MENU にする。
  メニュー設定：
  MENU　：Paint
  PAGE　：Detail1 (P2)
  ITEM　：Detail → Off
  PAGE　：Gamma (P5)
  ITEM　：Gamma → On
  PAGE　：Knee/W.Clip (P6)
  ITEM　：Knee → Off
  ITEM　：White Clip → Off

レンズ絞り：CLOSE

調整手順：
1. 波形モニタの設定
   - LUM モード
2. マスターブラック調整
   調整箇所：
   MENU　：Paint
   PAGE　：Video Level (P1)
   ITEM　：Black [M]
   規格　：A = 5 ± 1 IRE

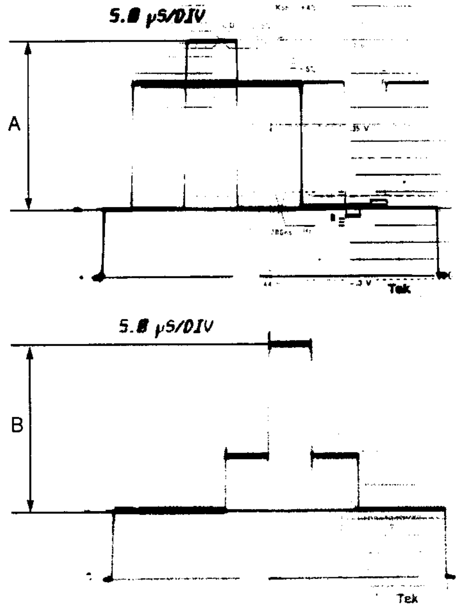


(波形モニタ)

3. ブラックバランス自動調整を実行する。
   AUTO W/B BAL スイッチ (フロントパネル) → BLK
4. メニュー設定：
   MENU　：System config
   PAGE　：PR/VA/TEST (S3)
   ITEM　：Test → 2

5. A/D Gain [G] 調整

調整箇所：
MENU　: System config
PAGE　: PR/VA/TEST (S3)
ITEM　: PR AD G [G]
規格　: OUTPUT/DCC スイッチ（サイドパネル）をCAM ↔ BARSと切り換えても100%白レベルが変動しないこと。
A = B



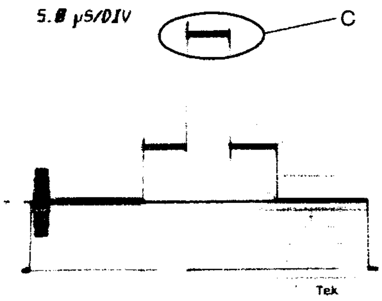
(波形モニタ)

6. R/G/B スイッチ（サイドパネル）→ ENC
7. OUTPUT/DCC スイッチ（サイドパネル）→ CAM/OFF
8. A/D Gain [R] 調整

調整箇所：
MENU　: System config
PAGE　: PR/VA/TEST (S3)
ITEM　: PR AD G [R]
規格　: キャリアリーク C = 最小

9. A/D Gain [B] 調整

調整箇所：
MENU　: System config
PAGE　: PR/VA/TEST (S3)
ITEM　: PR AD G [B]
規格　: キャリアリーク C = 最小



(波形モニタ)

10. 手順8, 9を交互に繰り返し，キャリアリークを最小にする。

ファイルストア：
ファイルストアを実行する。
MENU　: Triming File
PAGE　: Triming File (T1)
ITEM　: File Store
(MENU SEL スイッチを押して実行)

調整終了後の設定：
MENU　: System config
PAGE　: PR/VA/TEST (S3)
ITEM　: Test → Off

4-3-10. VA Gain 調整

感度・標準色温度設定：
VAゲイン調整にはできるだけ反射型のチャート（反射率89.9%）を使用してください。パターンボックスを使用する場合は良くメンテナンスされているものを使用してください。

- チャート面の照度は2000 lx，色温度3200 Kにすること。
- レンズ絞り値はF7.0以上であること。

注意事項：
下記のトリマコンデンサは調整が困難ですので絶対に回さないでください。
VA-163基板　：⊘CT200,⊘CT300,⊘CT400

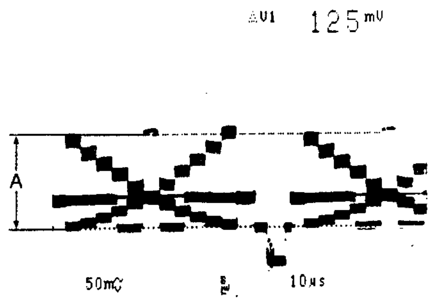
測定器　：オシロスコープ，波形モニタ
被写体　：グレースケールチャート

準備：

- WHITE BALスイッチ（サイドパネル）→PRST
- GAINスイッチ（サイドパネル）→L（0dB）
- VA-163基板をEX-464にて基板延長する。
- RGB/ENCスイッチ（サイドパネル）→ENC

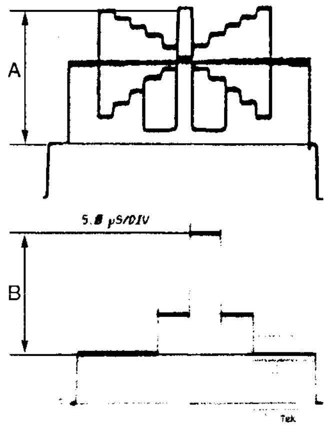
調整手順：

1. MENU SELスイッチ（フロントパネル）を押しながらDISPスイッチ（サイドパネル）をMENUにする。
2. メニュー設定：
   MENU　：Paint
   PAGE　：Knee/W.Clip（P6）
   ITEM　：Knee→Off
3. レンズ絞り：CLOSE
4. レベル自動調整を実行する。
   MENU　：Operation
   PAGE　：Auto Setup（?8）
   ITEM　：Level Auto
   （MENU SELスイッチを押して実行）
5. TEST OUT端子にてブラックレベルが5 IREであることを確認する。
   （規格外であれば4-3-14. Master Black調整を行う）
6. 測定点　：TP72（GND：TP71）/VA-163延長基板
   レンズ絞り：A = 125 mV
   （このときレンズ絞り値はF7.0以上であること）



（オシロスコープ）

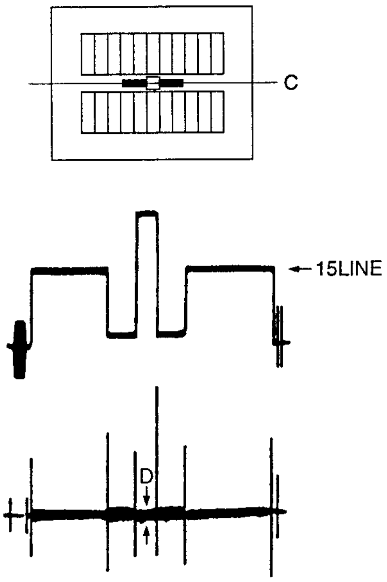
7. ENC/RGBスイッチ（サイドパネル）→RGB
   R/G/Bスイッチ（サイドパネル）→G
8. VAゲイン（G）調整
   測定点　：TEST OUT端子
   調整箇所　：⊘RV300（G GAIN）/VA-163基板パネル
   規格　：TEST波形を2↔Offの間で切り換えたときAとBのレベルが等しくなること。A=B
   メニュー設定：
   MENU　：Paint
   PAGE　：Knee/W.Clip（P6）
   ITEM　：Test



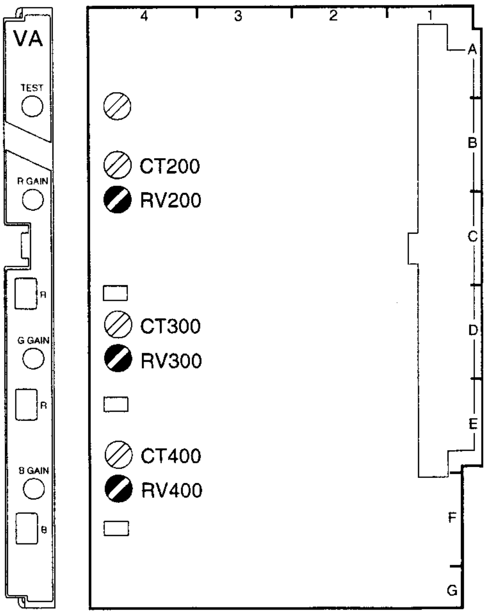
（波形モニタ）

9. メニュー設定：
   MENU　: Paint
   PAGE　: Knee/W.Clip
   ITEM　: TEST → Off
10. 波形モニタでCの部分を15ラインセレクトする。
11. 波形モニタをCHROMAモードにする。
12. RGB/ENCスイッチ（サイドパネル）→ENC
13. 測定点　: TEST OUT端子
   調整箇所 : ●RV200 (R GAIN) /VA-163基板パネル
   　　　　　●RV400 (B GAIN) /VA-163基板パネル

規格　: キャリアリークD＝最小



（波形モニタ）


VA
TEST
R GAIN
R
G GAIN
R
B GAIN
B
4
3
2
1
A
B
C
D
E
F
G
CT200
RV200
CT300
RV300
CT400
RV400

VA-163 BOARD (A SIDE)

4-3-11.VA MOD 調整

測定器　：波形モニタ
測定箇所　：TEST OUT 端子

準備：

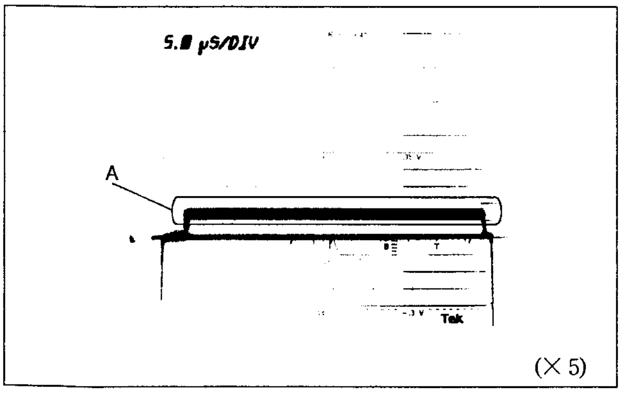
- TEST OUT 端子に波形モニタを接続する。
- GAIN スイッチ（サイドパネル）→ L（0dB）
- RGB/ENC スイッチ（サイドパネル）→ RGB
- R/G/B スイッチ（サイドパネル）→ R

レンズ絞り：CLOSE

調整手順：

1. 波形モニタの設定
   - LUM モード
2. MENU SEL スイッチ（フロントパネル）を押しながら DISP スイッチ（サイドパネル）を MENU にする。
3. VA MOD [R] 調整

   メニュー設定：
   MENU　：Maintenance
   PAGE　：White Shading (M2)
   ITEM　：H Saw [R] → 99
   調整箇所：
   MENU　：System config
   PAGE　：PR/VA/TEST (S3)
   ITEM　：VA MOD [R]
   規格　：A 部をフラットにする。
   このとき H Saw [R] の値を変化させても
   波形 A が変動しないこと。



4. VA MOD [G] 調整

   R/G/B スイッチ（サイドパネル）→ G
   メニュー設定
   MENU　：Maintenance
   PAGE　：White Shading (M2)
   ITEM　：H Saw [G] → 99
   調整箇所：
   MENU　：System config
   PAGE　：PR/VA/TEST (S3)
   ITEM　：VA MOD [G]
   規格　：A 部をフラットにする。
   このとき H Saw [G] の値を変化させても
   波形 A が変動しないこと。

5. VA MOD [B] 調整

   R/G/B スイッチ（サイドパネル）→ B
   メニュー設定：
   MENU　：Maintenance
   PAGE　：White Shading (M2)
   ITEM　：H Saw [B] → 99
   調整箇所：
   MENU　：System config
   PAGE　：PR/VA/TEST (S3)
   ITEM　：VA MOD [B]
   規格　：A をフラットにする。
   このとき H Saw [B] の値を変化させても
   波形 A が変動しないこと。

ファイルストア：
ファイルストアを実行する。
MENU　：Triming File
PAGE　：Triming File (T1)
ITEM　：File Store
(MENU SEL スイッチを押して実行)

調整終了後の設定：

- メニュー設定：
  MENU　：Maintenance
  PAGE　：White Shading (M2)
  ITEM　：Clear
  (MENU SEL スイッチを押して実行)

4-3-12. Black Shading 調整

注意事項：
Black Shading を実行して得た補正データは OHB FILE に保存されません。従って OHB を交換，もしくは新規に取り付けた場合は必ず本調整を行ってください。
Shading動作が正常に終了しない場合は，ビューファインダまたはMSUに表示されるメッセージを参考にして再度調整をおこなってください。それでも正常に終了しない場合は，サービス担当者にご相談ください。

準備：
- TEST OUT 端子に波形モニタを接続する。
- RGB/ENC スイッチ（サイドパネル）→ENC

測定箇所　：TEST OUT 端子
レンズ絞り：CLOSE

調整手順：
1. MENU SEL スイッチ（フロントパネル）を押しながら DISP スイッチ（サイドパネル）を MENU にする。
2. ブラックシェーディング自動調整を実行する。
   メニュー設定：
   MENU　　：Maintenance
   PAGE　　：Auto Setup（M4）
   ITEM　　：Black Shading
   (MENU SEL スイッチを押して実行)
3. ビューファインダ画面もしくはMSUのメニュー操作部に正常終了のメッセージが表示されるのを確認する。エラーメッセージが表示された場合はメッセージを参考に再度調整を行う。

終了時のメッセージと意味

BLACK : OK	：正常終了
LEVEL TOO HIGH	：レンズCLOSE が完全に動作しない場合等
TIME LIMIT	：規定回数で Black Shading が終了しなかった
OVER FLOW	：現在値と基準値の差が大きく，調整範囲を越えていたため，調整できなかった

4. 波形モニタにてキャリアレベルが2 IRE以下であることを確認する。

- Manual Black Shading 調整（参考）

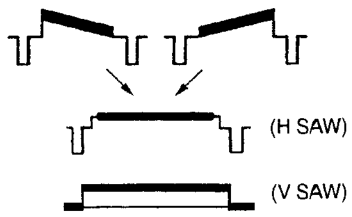
注意事項：
4-3-12. Black Shading 調整で補正しきれない場合のみこの調整を行ってください。

測定器　：波形モニタ

準備：
- TEST OUT 端子に波形モニタを接続する。
- GAIN スイッチ（サイドパネル）→H（18 dB）

測定箇所　：TEST OUT 端子
レンズ絞り：CLOSE

調整手順：
1. 波形モニタの設定
   - LUM モード
   - VOLTFULL SCALE レンジ→0.5
2. ENC/RGB スイッチ（サイドパネル）→RGB
   R/G/B スイッチ（サイドパネル）→G
3. MENU SEL スイッチ（フロントパネル）を押しながら DISP スイッチ（サイドパネル）を MENU にする。
4. ブラックレベルを 5 IRE に設定
   調整箇所：
   MENU　　：Maintenance
   PAGE　　：Black Shading（M3）
   ITEM　　：Black M
5. シェーディングがある場合は下記の表に従い波形をフラットにする。
6. R-ch，B-ch についても同様に調整を行う。

	スイッチ	H SAW PAGE : Black Shading (M3)	V SAW PAGE : Black Shading (M3)
R	ENC/RGB→RGB R/G/B→R	ITEM : H Saw [R]	ITEM : V Saw [R]
G	ENC/RGB→RGB R/G/B→G	ITEM : H Saw [G]	ITEM : V Saw [G]
B	ENC/RGB→RGB R/G/B→B	ITEM : H Saw [B]	ITEM : V Saw [B]
TEST OUT 端子			

ファイルストア：
ファイルストアを実行する。
MENU　: Reference File
PAGE　: Reference File　(R1)
ITEM　: File Store
(MENU SEL スイッチを押して実行)

調整終了後の設定：

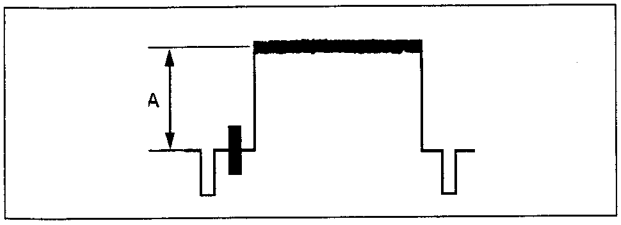
- ENC/RGB スイッチ（サイドパネル）→ ENC
- GAIN スイッチ（サイドパネル）→ L（0 dB)

4-3-13. White Shading 調整

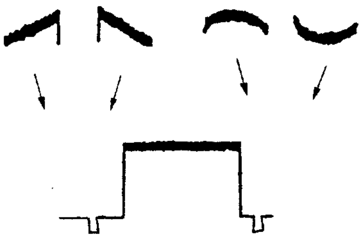
注意事項：
White Shading 調整はパターンのムラや輝度，レンズの絞りやズームの条件が正しくないと適切な調整になりませんのでご注意ください。

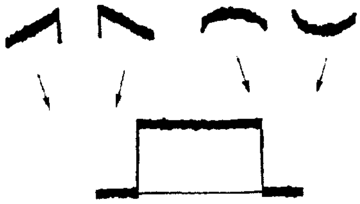
測定器　：波形モニタ
測定箇所：TEST OUT 端子
被写体　：全面白パターン

準備：
- TEST OUT 端子に波形モニタを接続する。
- ENC/RGB スイッチ（サイドパネル）→ ENC
- MENU SEL スイッチ（フロントパネル）を押しながら DISP スイッチ（サイドパネル）を MENU にする。
  メニュー設定：
  MENU　：Paint
  PAGE　：Knee/W.Clip（P6）
  ITEM　：Knee → Off
- 全面白パターンをアンダースキャン画枠一杯に撮像する。
- レンズ絞り　：A＝80 ±5 IRE



調整手順：
1. WHITE BAL スイッチ（サイドパネル）→ PRST
2. 波形モニタの設定
   - LUM モード
   - VOLTFULL SCALE レンジ → 0.5
3. ENC/RGB スイッチ（サイドパネル）→ RGB
   R/G/B スイッチ（サイドパネル）→ G
4. シェーディングがある場合は右表に従い波形をフラットにする。
5. R-ch，B-ch についても同様に調整を行う。

	スイッチ	H SAW PAGE：White Shading（M2）	H PARA PAGE：White Shading（M2）
R	ENC/RGB → RGB R/G/B → R	ITEM：H Saw［R］	ITEM：H Para［R］
G	ENC/RGB → RGB R/G/B → G	ITEM：H Saw［G］	ITEM：H Para［G］
B	ENC/RGB → RGB R/G/B → B	ITEM：H Saw［B］	ITEM：H Para［B］
TEST OUT 端子			

	スイッチ	V SAW PAGE：White Shading（M2）	V PARA PAGE：White Shading（M2）
R	ENC/RGB → RGB R/G/B → R	ITEM：V Saw［R］	ITEM：V Para［R］
G	ENC/RGB → RGB R/G/B → G	ITEM：V Saw［G］	ITEM：V Para［G］
B	ENC/RGB → RGB R/G/B → B	ITEM：V Saw［B］	ITEM：V Para［B］
TEST OUT 端子			

ファイルストア：
ファイルストアを実行する。
MENU　：Reference File
PAGE　：Reference File（R1）
ITEM　：File Store
（MENU SEL スイッチを押して実行）

調整終了後の設定：
- ENC/RGB スイッチ（サイドパネル）→ ENC

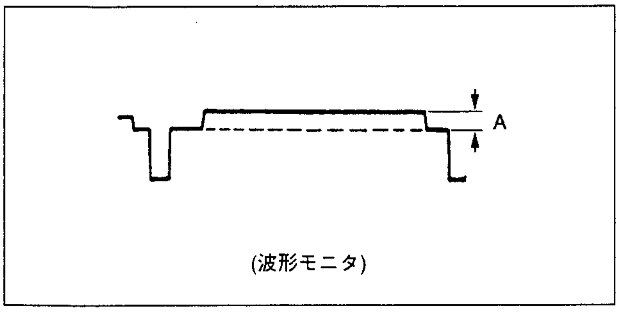
4-3-14. Master Black 調整

測定器　: 波形モニタ
測定箇所　: TEST OUT 端子

準備 :
- TEST OUT 端子に波形モニタを接続する。
- RGB/ENC スイッチ (サイドパネル) → RGB
- R/G/B スイッチ (サイドパネル) → G

レンズ絞り　: CLOSE

調整手順 :
1. 波形モニタの設定
   - LUM モード
2. MENU SEL スイッチ (フロントパネル) を押しながら DISP スイッチ (サイドパネル) を MENU にする。
3. 調整箇所 :
   MENU　: Paint
   PAGE　: Video Level (P1)
   ITEM　: Black [M]
   規格　: A = 5 ± 1 IRE



(波形モニタ)

4. RGB/ENC スイッチ (サイドパネル) → ENC
5. ブラックバランス自動調整を実行する。
   AUTO W/B BAL スイッチ (フロントパネル) → BLK

ファイルストア :
ファイルストアを実行する。
MENU　: Reference File
PAGE　: Reference File (R1)
ITEM　: File Store
(MENU SEL スイッチを押して実行)

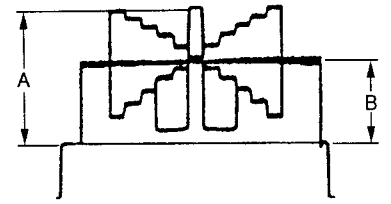
4-3-15. ガンマ補正調整

測定器　：波形モニタ，ベクトルスコープ
測定箇所：TEST OUT端子
被写体　：グレースケールチャート

準備：
- TEST OUT端子に波形モニタを接続する。
- 波形モニタのPIX OUT端子にベクトルスコープを接続する。
- グレースケールチャートをアンダースキャン画枠一杯に撮像する。
- RGB/ENCスイッチ（サイドパネル）→RGB
- R/G/Bスイッチ（サイドパネル）→G
- MENU SELスイッチ（フロントパネル）を押しながらDISPスイッチ（サイドパネル）をMENUにする。
- メニュー設定：
  MENU　：Paint
  PAGE　：Gamma（P5）
  ITEM　：Gamma → On
  PAGE　：Knee/W.Clip（P6）
  ITEM　：Knee → Off

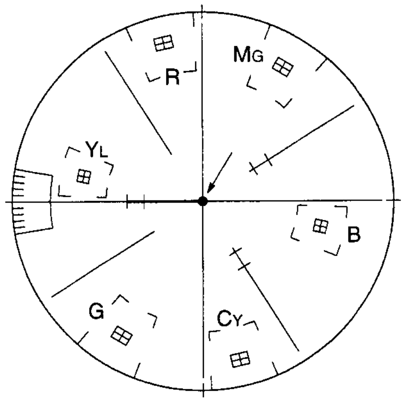
レンズ絞り：A = 100 ± 2 IRE

調整手順：
1. Gamma［マスター］調整
   調整箇所：
   MENU　：Paint
   PAGE　：Video Level（P1）
   ITEM　：Gamma ［M］
   規格　：B = 60 ± 2 IRE



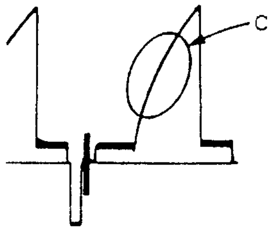
（波形モニタ）

2. レンズ絞り：CLOSE
3. メニュー設定：
   MENU　：Paint
   PAGE　：Video Level（P1）
   ITEM　：Test → 1
4. RGB/ENCスイッチ（サイドパネル）→ENC
5. ホワイトバランス自動調整を実行する。
   WHT BALスイッチ（サイドパネル）→A
   AUTO W/B BALスイッチ（フロントパネル）→WHT
6. Gamma［R］調整
   調整箇所：
   MENU　：Paint
   PAGE　：Video Level（P1）
   ITEM　：Gamma ［R］
   規格　：ベクトルスコープの輝点を中心に近づける。
7. Gamma［B］調整
   調整箇所：
   MENU　：Paint
   PAGE　：Video Level（P1）
   ITEM　：Gamma ［B］
   規格　：ベクトルスコープの輝点を中心に近づける。
8. 手順6, 7を交互に繰り返し輝点を最小にする。



（ベクトルスコープ）

9. 波形モニタでC部のキャリアリークが無いことを確認する。
   規格　：C = 最小



（波形モニタ）

ファイルストア：
ファイルストアを実行する。
MENU　：Reference File
PAGE　：Reference File（R1）
ITEM　：File Store
（MENU SELスイッチを押して実行）

調整終了後の設定：
- メニュー設定：
  MENU　：Paint
  PAGE　：Video Level（P1）
  ITEM　：Test → Off
- WHT BALスイッチ（サイドパネル）→PRST

4-3-16. フレア調整

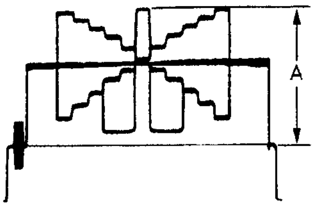
測定器　：波形モニタ
測定箇所：TEST OUT 端子
被写体　：グレースケールチャート

準備：

- TEST OUT 端子に波形モニタを接続する。
- グレースケールチャートをアンダースキャン画枠一杯に撮像する。
- RGB/ENC スイッチ（サイドパネル）→ ENC
- MENU SEL スイッチ（フロントパネル）を押しながら DISP スイッチ（サイドパネル）を MENU にする。

  メニュー設定：
  MENU　：Paint
  PAGE　：Knee/W.Clip　(P6)
  ITEM　：Knee → Off

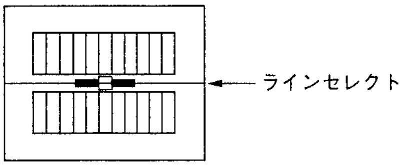
レンズ絞り　：A = 100 ±2 IRE



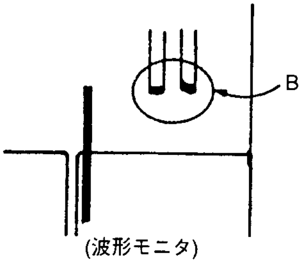
(波形モニタ)

調整手順：

1. ホワイトバランス自動調整を実行する。
   WHITE BAL スイッチ（サイドパネル）→ A
   AUTO W/B BAL スイッチ（フロントパネル）→ WHT
2. レンズ絞りを基準値（A = 100 ±2 IRE）より 2 絞り開ける。
3. RGB/ENC スイッチ（サイドパネル）→ RGB
   R/G/B スイッチ（サイドパネル）→ G
4. モニタ画面の中央部に波形モニタの 15LINE SELECT を合わせる。



5. Flare を ON/OFF しても B 部のレベルが変動しないことを確認する。変動する場合は Flare を ON にし，Flare [G] にて調整する。
   メニュー設定：
   MENU　：Paint
   PAGE　：Video Level　(P1)
   ITEM　：Flare → On/Off
   調整箇所：
   ITEM　：Flare [G]
6. RGB/ENC スイッチ（サイドパネル）→ ENC
7. Flare [R] 調整
   調整箇所：
   MENU　：Paint
   PAGE　：Video Level　(P1)
   ITEM　：Flare　[R]
   規格　：キャリアリークを最小
8. Flare [B] 調整
   調整箇所：
   MENU　：Paint
   PAGE　：Video Level　(P1)
   ITEM　：Flare　[B]
   規格　：キャリアリークを最小



(波形モニタ)

9. 手順7,8を交互に繰り返し，キャリアリークを最小にする。

ファイルストア：
ファイルストアを実行する。
MENU　：Reference File
PAGE　：Reference File　(R1)
ITEM　：File Store
(MENU SEL スイッチを押して実行)

調整終了後の設定：

- WHITE BAL スイッチ（サイドパネル）→ PRST

4-3-17.Pre Knee 調整

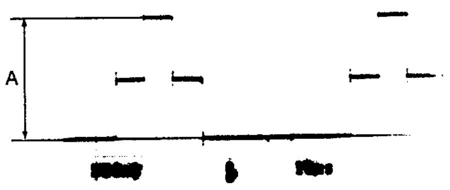
測定器　：オシロスコープ，波形モニタ

準備：
- VA-163 を EX-464 にて基板延長する。

レンズ絞り：CLOSE

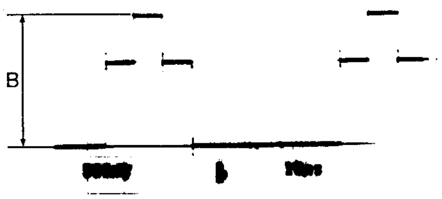
調整手順：

1. MENU SEL スイッチ（フロントパネル）を押しながら DISP スイッチ（サイドパネル）を MENU にする。
2. メニュー設定：
   MENU　：Paint
   PAGE　：Knee/W.Clip（P6）
   ITEM　：Knee → On
3. RGB/ENC スイッチ（サイドパネル）→ ENC
4. GAIN スイッチ（サイドパネル）→ M（9dB）
5. WHITE BAL スイッチ（サイドパネル）→ PRST
6. メニュー設定：
   MENU　：System config
   PAGE　：Pre Knee/Zebra（S4）
   ITEM　：Test → 2
7. Prekneel［G］調整
   測定点　：TP52（GND：GND（A））/VA-163 延長基板
   調整箇所：
   MENU　：System config
   PAGE　：Pre Knee/Zebra（S4）
   ITEM　：PreKneel［G］
   規格　：A = 1.68 ± 0.02 V p-p



（オシロスコープ）

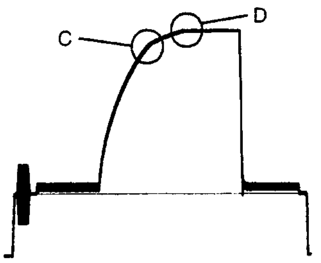
8. メニュー設定：
   MENU　：Operation
   PAGE　：Gain SW（?3）
   ITEM　：Middle → 12dB
9. PreKnee2［G］調整
   測定点　：TP52（GND：GND（A））/VA-163 延長基板
   調整箇所：
   MENU　：System config
   PAGE　：Pre Knee/Zebra（S4）
   ITEM　：PreKnee2［G］
   規格　：B = 1.80 ± 0.02 V p-p



（オシロスコープ）

10. メニュー設定：
    MENU　：System config
    PAGE　：Pre Knee/Zebra（S4）
    ITEM　：Test → 1
11. GAIN スイッチ（サイドパネル）→ H（18dB）
    OUTPUT/DCC スイッチ（サイドパネル）→ CAM/ON

12. Preknee1 [R] 調整
    測定点 : TEST OUT 端子
    調整箇所 :
    MENU : System config
    PAGE : Pre Knee/Zebra (S4)
    ITEM : PreKnee1 [R]
    規格 : キャリアリーク C= 最小
13. Preknee1 [B] 調整
    測定点 : TEST OUT 端子
    調整箇所 :
    MENU : System config
    PAGE : Pre Knee/Zebra (S4)
    ITEM : PreKnee1 [B]
    規格 : キャリアリーク C= 最小
14. PreKnee2 [R] 調整
    測定点 : TEST OUT 端子
    調整箇所 :
    MENU : System config
    PAGE : Pre Knee/Zebra (S4)
    ITEM : PreKnee2 [R]
    規格 : キャリアリーク D= 最小
15. PreKnee2 [B] 調整
    測定点 : TEST OUT 端子
    調整箇所 :
    MENU : System config
    PAGE : Pre Knee/Zebra (S4)
    ITEM : PreKnee2 [B]
    規格 : キャリアリーク D= 最小



(波形モニタ)

ファイルストア :
ファイルストアを実行する。
MENU : Triming File
PAGE : Triming File (T1)
ITEM : File Store
(MENU SEL スイッチを押して実行)

調整終了後の設定 :

- メニュー設定 :
  MENU : Operation
  PAGE : Gain SW (?3)
  ITEM : Middle → 9dB
  MENU : System config
  PAGE : Pre Knee/Zebra (S4)
  ITEM : Test → Off
- GAIN スイッチ (サイドパネル) → L (0dB)

4-3-18. ニー，ホワイトクリップ調整

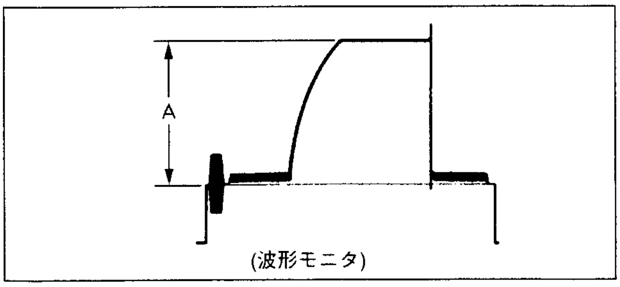
測定器　: 波形モニタ
測定箇所　: TEST OUT 端子

準備 :
- TEST OUT 端子に波形モニタを接続する。
- OUTPUT/DCC スイッチ（サイドパネル）→ CAM/OFF
- RGB/ENC スイッチ（サイドパネル）→ ENC
- WHITE BAL スイッチ（サイドパネル）→ PRST
- GAIN スイッチ（サイドパネル）→ M（9dB）

調整手順 :

1. ブラックレベルが 5 IRE であることを確認する。
2. MENU SEL スイッチ（フロントパネル）を押しながら DISP スイッチ（サイドパネル）を MENU にする。
3. ニーポイント調整

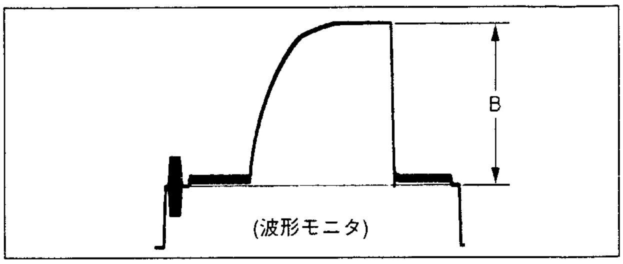
   メニュー設定 :
   MENU　: Paint
   PAGE　: Knee/W.Clip (P6)
   ITEM　: Test → 1
   ITEM　: White Clip → Off
   ITEM　: Knee → On
   ITEM　: Knee Max → On
   調整箇所 :
   ITEM　: Point
   規格　: A = 98 ± 2 IRE



(波形モニタ)

4. ニースロープ調整

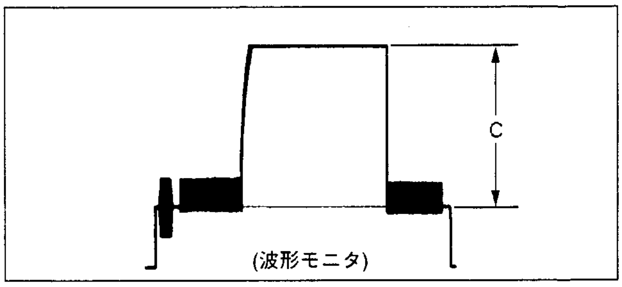
   メニュー設定 :
   MENU　: Paint
   PAGE　: Knee/W.Clip (P6)
   ITEM　: Knee Max → Off
   調整箇所 :
   ITEM　: Slope
   規格　: B = 109 ± 2 IRE



(波形モニタ)

5. GAIN スイッチ（サイドパネル）→ H（18dB）
6. ホワイトクリップ調整

   メニュー設定 :
   MENU　: Paint
   PAGE　: Knee/W.Clip (P6)
   ITEM　: White Clip → On
   調整箇所 :
   ITEM　: White Clip
   規格　: C = 109 ± 2 IRE



(波形モニタ)

調整終了後の設定 :
- メニュー設定 :
  MENU　: Paint
  PAGE　: Knee/W.Clip (P6)
  ITEM　: Test → Off
- GAIN スイッチ（サイドパネル）→ L（0dB）

ファイルストア :
ファイルストアを実行する。
MENU　: Reference File
PAGE　: Reference File (R1)
ITEM　: File Store
（MENU SEL スイッチを押して実行）

注意事項 :
上記の調整はホワイトクリップレベルを 109 IRE に設定した場合の調整値です。109 IRE 以外で使用したい場合は下記の表に基づいて KNEE POINT, KNEE SLOPE, WHITE CLIP LEVEL を合わせてください。

	ホワイトクリップレベル (単位 : IRE)			
	109	107	105	103
KNEE POINT	98	98	96	96
KNEE SLOPE	109	109	107	107
WHITE CLIP	109	107	105	103

4-3-19.A/D CLOCK PHASE 調整

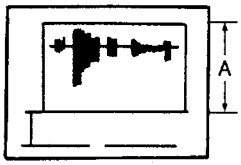
測定器　：波形モニタ
測定箇所：TEST OUT 端子
被写体　：マルチバーストチャート

準備：

- TEST OUT 端子に波形モニタを接続する。
- マルチバーストチャートをアンダースキャン画枠一杯に撮像する。マルチバーストの9MHzを画面の中央位置に表示する。
- OUTPUT/DCC スイッチ（サイドパネル）→ CAM/OFF
- RGB/ENC スイッチ（サイドパネル）→ ENC
- MENU SEL スイッチ（フロントパネル）を押しながら DISP スイッチ（サイドパネル）を MENU にする。
  メニュー設定：
  MENU　：Paint
  PAGE　：Knee/W.Clip (P6)
  ITEM　：Auto knee → On

調整手順：

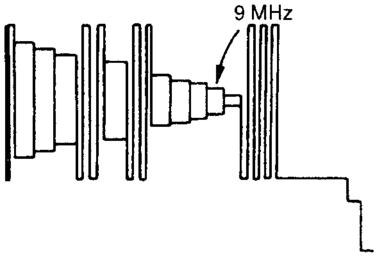
1. レンズ絞り：A = 90 ± 2 IRE



(波形モニタ)

2. CLOCK PHASE [G]
   調整箇所：
   MENU　：System config
   PAGE　：PR/VA/TEST (S3)
   ITEM　：G Clock
   規格　：9MHzの信号部分を最大にする。

3. CLOCK PHASE [R/B]
   調整箇所：
   MENU　：System config
   PAGE　：PR/VA/TEST (S3)
   ITEM　：R/B Clock
   規格　：9MHzの信号部分のエイリアシングが最小になるようにする。



(波形モニタ)

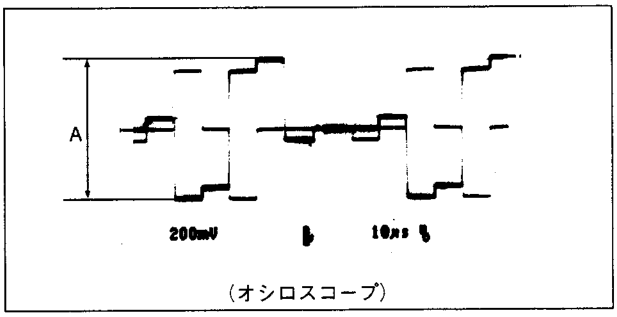
ファイルストア：
ファイルストアを実行する。
MENU　：Triming File
PAGE　：Triming File (T1)
ITEM　：File Store
(MENU SEL スイッチを押して実行)

4-3-20. VTR R-Y/B-Y 調整

測定器　: オシロスコープ

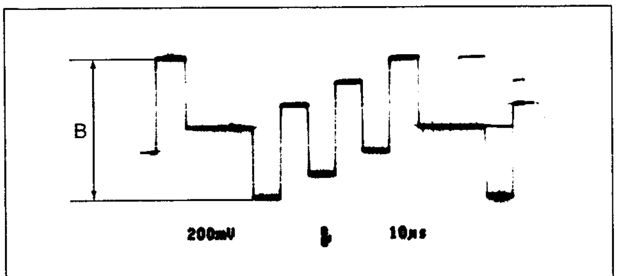
準備 :
- OUTPUT/DCC スイッチ（サイドパネル）→ BARS

調整手順 :
1. MENU SEL スイッチ（フロントパネル）を押しながら DISP スイッチ（サイドパネル）を MENU にする。
2. VTR R-Y 調整
   測定点　: TP4（R-Y）（GND : E1）/DA-88 基板パネル
   調整箇所 :
   MENU　: System config
   PAGE　: VTR/CCU（S5）
   ITEM　: VTR R-Y
   規格　: A = 756 ± 2 mV



（オシロスコープ）

3. VTR B-Y 調整
   測定点　: TP5（B-Y）（GND : E1）/DA-88 基板パネル
   調整箇所 :
   MENU　: System config
   PAGE　: VTR/CCU（S5）
   ITEM　: VTR B-Y
   規格　: B = 756 ± 2 mV



（オシロスコープ）

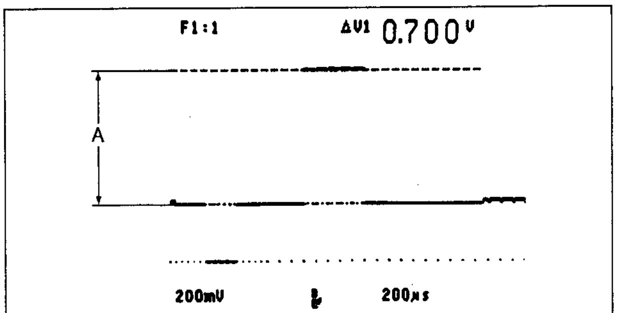
ファイルストア :
ファイルストアを実行する。
MENU　: Triming File
PAGE　: Triming File（T1）
ITEM　: File Store
（MENU SEL スイッチを押して実行）

4-3-21. CCU Y/R-Y/B-Y 調整

測定器　: オシロスコープ

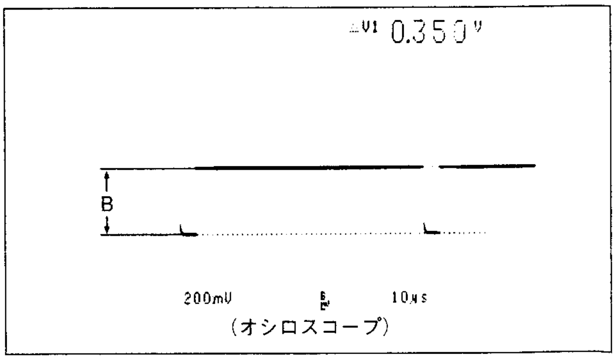
準備 :
- カメラに CCU-700 を接続する。

調整手順 :
1. MENU SEL スイッチ（フロントパネル）を押しながら DISP スイッチ（サイドパネル）を MENU にする。
2. CCU Y Sample 調整
   測定点　: TP3（Y）（GND : E1）/DA-88 基板パネル
   調整箇所 :
   MENU　: System config
   PAGE　: VTR/CCU（S5）
   ITEM　: CCU Y SAMP
   規格　: A = 700 ± 2 mV



（オシロスコープ）

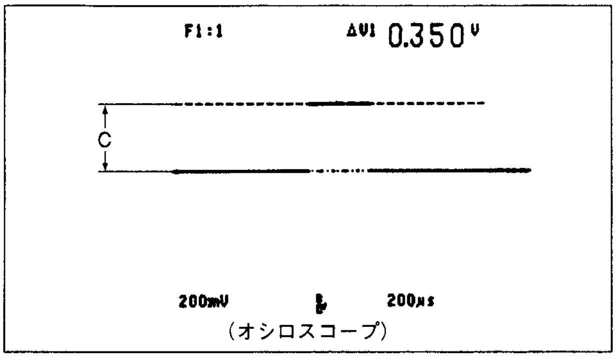
3. CCU R-Y Sync 調整
   測定点　: TP4（R-Y）（GND : E1）/DA-88 基板パネル
   調整箇所 :
   MENU　: System config
   PAGE　: VTR/CCU（S5）
   ITEM　: CCU R-Y SYNC
   規格　: B = 350 ± 2 mV



（オシロスコープ）

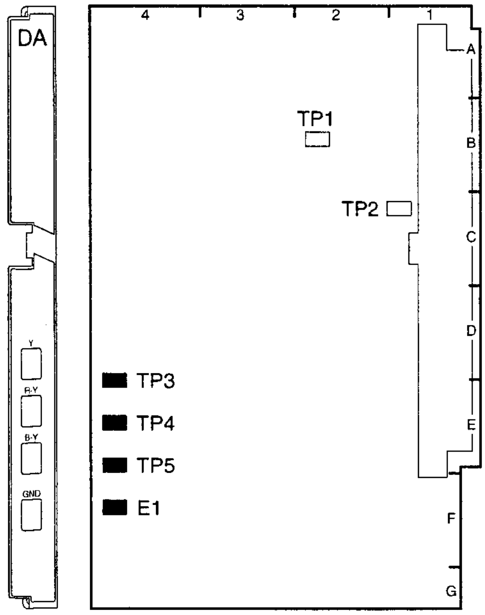
4. CCU B-Y Sample 調整

測定点　: TP5 (B-Y) (GND : E1) /DA-88 基板パネル
調整箇所 :
MENU　: System config
PAGE　: VTR/CCU (S5)
ITEM　: CCU B-Y SAMP
規格　: C = 350 ± 2 mV



（オシロスコープ）

ファイルストア :
ファイルストアを実行する。
MENU　: Triming File
PAGE　: Triming File (T1)
ITEM　: File Store
(MENU SEL スイッチを押して実行)



DA-88 BOARD (A SIDE)

4-3-22. RGB 調整

測定器　: オシロスコープ

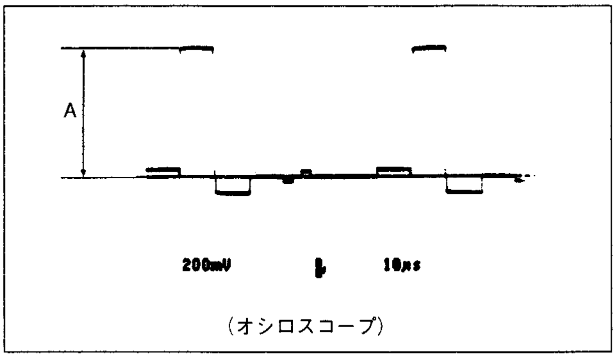
準備 :

- IF-510 を EX-464 にて基板延長する。
- MENU SEL スイッチ (フロントパネル) を押しながら DISP スイッチ (サイドパネル) を MENU にする。
  メニュー設定 :
  MENU　: System config
  PAGE　: VTR/CCU (S5)
  ITEM　: CB → On

調整手順 :

1. G Video 調整

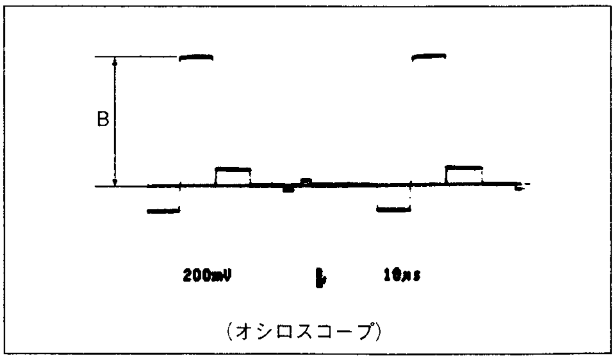
測定点　: TP61 (GND : GND (A)) /IF-510 延長基板
調整箇所 :
MENU　: System config
PAGE　: VTR/CCU (S5)
ITEM　: RGB OFFSET
規格　: A = 700 ± 5 mV



（オシロスコープ）

2. R Video 確認

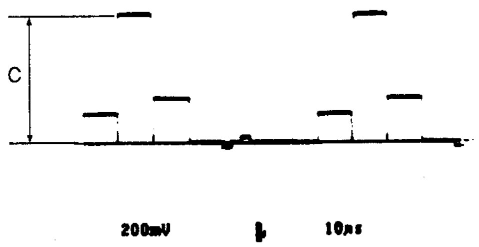
測定点　: TP63 (GND : GND (A)) /IF-510 延長基板
規格　: B = 700 ± 7 mV



（オシロスコープ）

(次頁へ続く)

3. B Video 確認
測定点　: TP59 (GND : GND (A)) /IF-510 延長基板
規格　: C = 700 ± 7 mV



(オシロスコープ)

ファイルストア：
ファイルストアを実行する。
MENU　: Triming File
PAGE　: Triming File (T1)
ITEM　: File Store
(MENU SEL スイッチを押して実行)

4-3-23.調整終了後のメニュー設定

MENU　: Paint
　PAGE : Detail1 (P2)
　ITEM : Detail → On
　PAGE : Gamma (P5)
　ITEM : Gamma → On
　PAGE : Knee/W.Clip (P6)
　ITEM : Knee → On
MENU　: System config
　PAGE : VTR/CCU (S5)
　ITEM : CB → Off
MENU　: Reference File
　PAGE : Reference File (R1)
　ITEM : File Store
　(MENU SEL スイッチを押して実行)

Section 1
Installation

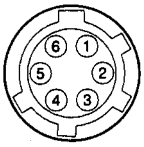
1-1. Connectors and Cables

1-1-1. Connector Input/Output Signals

Output Signal

- TEST OUT
  BNC 75 Ω 1.0 Vp-p

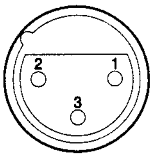
REMOTE (6P FEMALE)



(EXTERNAL VIEW)

No.	SIGNAL	SPECIFICATIONS
1	SERIAL DATA IN	Serial data for camera control
2	SERIAL DATA OUT	
3	UNREG (G)	
4	VBS (X) OUT	VBS 1 Vp-p, Zo = 75 Ω
5	VBS (G) OUT	
6	UNREG OUT	+10.5 V to +17 V

MIC IN (3P FEMALE)

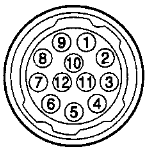


(EXTERNAL VIEW)

No.	SIGNAL	SPECIFICATIONS
1	MIC IN (G)	–60 dBu High impedance balanced
2	MIC IN (X)	
3	MIC IN (Y)	

(0 dBu=0.775 Vrms)

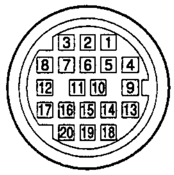
LENS (12P FEMALE)



(EXTERNAL VIEW)

No.	SIGNAL	SPECIFICATIONS
1	RET VIDEO ENABLE IN	ENABLE: 0 V DISABLE: +5 V or OPEN
2	RET 2 ENABLE IN	ENABLE: 0 V DISABLE: +5 V or OPEN
3	GND	GND for UNREG
4	AUTO +5 V OUT	AUTO: +5 V MANU: 0 V or OPEN
5	IRIS CONT OUT	+3.4 V (F16) to +6.2 V (F2.8)
6	UNREG OUT	+10.5 V to +17 V
7	IRIS POSITION IN	+3.4 V (F16) to +6.2 V (F2.8)
8	AUTO/MANU OUT	AUTO IRIS: 0 V MANUAL IRIS: +5 V
9	EXTENDER ON/OFF IN	EX 2 ON: 0 V EX 0.8 ON: +1.8 V OFF: +4.8 V
10	ZOOM POSITION IN	WIDE: 2 V TELE: 7 V
11	NC	No connection
12	NC	No connection

VF (20P FEMALE)



(EXTERNAL VIEW)

No.	SIGNAL	SPECIFICATIONS
1	NC	No connection
2	ABNORMAL IND OUT	H: Indicator lights L: Indicator goes out
3	16:9 MODE OUT	H: NORMAL (4:3) L: WIDE (16:9)
4	NC	No connection
5	COMP/VBS SW IN/OUT	*Note1
6	CCIR/EIA OUT	H:CCIR, L:EIA
7	NC	No connection
8	G TALLY OUT	H: Indicator lights L: Indicator goes out
9	NC	No connection
10	Y (X) OUT	1 Vp-p, VF:Zi = 1 kΩ
11	ZEBRA $\overline{\text{ON}}$ IN	H: OFF, L:ON
12	VF VIDEO OUT (X)	1.0 Vp-p, VF:Zi = 1 kΩ
13	NC	No connection
14	B-Y (X) OUT	700 mVp-p, VF:Zi = 1 kΩ, 75% color-bars
15	R-Y (X) OUT	700 mVp-p, VF:Zi = 1 kΩ, 75% color-bars
16	BATT IND OUT	H: Indicator lights L: Indicator goes out
17	TALLY IND OUT	H: Indicator lights L: Indicator goes out
18	+9.3 V (VF) OUT	REG +9.3 V
19	GND	GND
20	UNREG OUT	+10.5 V to 17 V

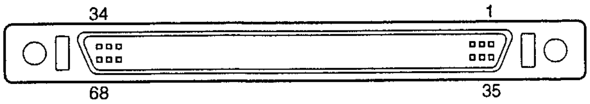
Note1: Specification of COMP/VBS SW Signal

When powering on, the microcomputer of the camera identifies a viewfinder in use by detecting the voltage at pin 5.

H: Color VF, L: B/W VF

- In use of B/W VF
  Voltage control of pin 5 is disabled during operation. Switching between the return video signal and monochrome signal for the viewfinder is done by the camera and selected signal is output at pin 12 to the viewfinder.
- In use of Color VF
  By controlling the voltage at pin 5 during operation, switching between the decoded return video signal and the camera component signal is done in the viewfinder.
  H: Camera, L: Return video

ANALOG CA (68P FEMALE)



(EXTERNAL VIEW)

*: In connection with CCU, **: In connection with VTR

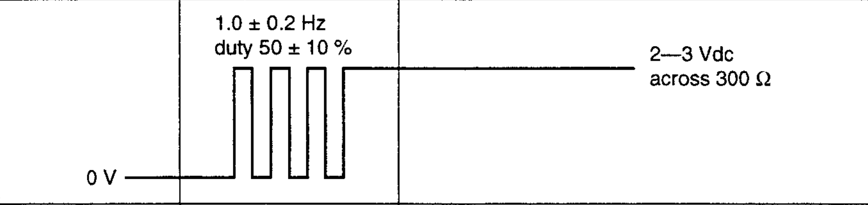
No.	SIGNAL	SPECIFICATIONS
1	UNREG GND	GND for UNREG
2	UNREG GND	GND for UNREG
3	VF UNREG GND	GND for VF UNREG
4	LENS UNREG GND	GND for LENS UNREG
5	UNREG IN	10.5 V to 17 V
6	UNREG IN	10.5 V to 17 V
7	VF UNREG IN	10.5 V to 17 V
8	LENS UNREG IN	10.5 V to 17 V
9	R OUT (X)	700 mVp-p ±2%, DC 0 ±200 mV, Zo = 75 Ω
10	B OUT (X)	700 mVp-p ±2%, DC 0 ±200 mV, Zo = 75 Ω
11	VBS OUT (G)	GND for VBS VIDEO
12	Y OUT (X)	VS 1.0 Vp-p, Zo = 75 Ω
13	B-Y OUT (X)	700 mVp-p, with sample 350 mV* 756 mVp-p (J) 700 mVp-p (UC) ** 525 mVp-p (CE)
14	NC	No connection
15	C OUT (X)	SC for S connector
16	VBS GENLOCK IN (X)	1.0 Vp-p ±6 dB
17	RET VIDEO IN (G)	GND for RET VIDEO
18	MONITOR VIDEO OUT (X)	VS 1.0 Vp-p, Zo = 75 Ω
19	BATTERY ALARM IN	Zi = 300 Ω *Note 2
20	NC	No connection
21	AUDIO CH1 CONT OUT	0 V (0 dB) to 7 V (–50 dB or less)
22	MIC 1 OUT (Y)	Zo ≤ 600 Ω, –60 dBu balanced
23	NC	No connection
24	SKIN TONE GATE OUT	1.0 Vp-p
25	TAPE REM IN	*Note 4
26	VTR SYNC OUT	+5.0 Vp-p Negative pulse, Zo ≤ 100 Ω
27	RET EN OUT	ENABLE; 0 V, DISABLE; +5 V or OPEN
28	PB REF IN	PB; +4.5 V, CAM; 0 V or OPEN
29	H CONT IN	0 V to 5 V, Analog
30	ANALOG GND	
31	DIGITAL HD OUT	3 Vp-p for Digital
32	COM CONT IN	5 Vp-p
33	IIC CLOCK OUT (CA)	5 Vp-p
34	IIC CLOCK OUT (ST)	5 Vp-p

No.	SIGNAL	SPECIFICATIONS
35	UNREG GND	GND for UNREG
36	UNREG GND	GND for UNREG
37	VF UNREG GND	GND for VF UNREG
38	LENS UNREG GND	GND for LENS UNREG
39	UNREG IN	10.5 V to 17 V
40	UNREG IN	10.5 V to 17 V
41	VF UNREG IN	10.5 V to 17 V
42	LENS UNREG IN	10.5 V to 17 V
43	G OUT (X)	700 mVp-p ±2%, DC 0 ±200 mV, Zo = 75 Ω
44	R/G/B GND	GND for R/G/B VIDEO
45	VBS OUT (X)	1.0 Vp-p ±10%, Zo = 75 Ω
46	R-Y OUT (X)	700 mVp-p, with sync 350 mV* 756 mVp-p (J) 700 mVp-p (UC) ** 525 mVp-p (CE)
47	Y/R-Y/B-Y GND	GND for Y/R-Y/B-Y
48	NC	No connection
49	C OUT (G)	GND for C
50	VBS GENLOCK IN (G)	GND for GENLOCK/H CONT IN
51	RET VIDEO IN (X)	1.0 Vp-p, Zi = 1 kΩ
52	MONITOR VIDEO OUT (G)	GND for MONITOR VIDEO
53	VTR START/STOP OUT	Zo ≤ 10 kΩ
54	NC	No connection
55	MIC 1 OUT (G)	GND for CAM MIC
56	MIC 1 OUT (X)	Zo ≤ 600 Ω, –60 dBu balanced
57	NC	No connection
58	NC	No connection
59	AUDIO LEVEL IN	Zi ≥ 1 kΩ (–15 dBu at 0 VU)
60	NC	No connection
61	V RESET IN/CF OUT	V Reset;0 V to +5 V, CF; 0 V to –5 V
62	REC TALLY IN	ON; +5 V, OFF; +2.5 V or 0 V, Zi ≥ 20 kΩ *Note 3
63	VTR SAVE OUT	SAVE; +4.5 V, STANDBY; 0 V, Zo ≤ 10 kΩ
64	GND	
65	SD IN/OUT	Serial data for camera control
66	COM DATA OUT	5 Vp-p
67	IIC DATA IN/OUT (CA)	5 Vp-p, 4700 Ω, Pull up
68	IIC DATA IN/OUT (ST)	5 Vp-p, 4700 Ω, Pull up

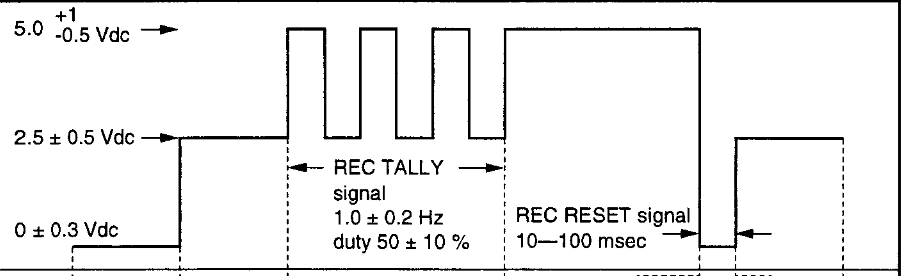
(0 dBu=0.775 Vrms)

Note 2 : Specifications of BATT ALARM Signal

VTR has a battery voltage detection and waring signal generation circuits and it sends the signal shown below to the camera.

Battery Terminal Voltage (VTR internal battery)	12.0—11.1 Vdc	11.1—10.8 Vdc	10.8 Vdc—
Input Signal at Pin 19	 0 V 1.0 ± 0.2 Hz duty 50 ± 10 % 2—3 Vdc across 300 Ω		
LED on Viewfinder	Stays out	Blinks at 1 Hz	Lights up

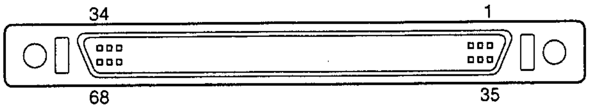
Note 3 : Specifications of REC TALLY Signal

Input Signal at Pin 62	 5.0 +1 -0.5 Vdc 2.5 ± 0.5 Vdc 0 ± 0.3 Vdc REC TALLY signal 1.0 ± 0.2 Hz duty 50 ± 10 % REC RESET signal 10—100 msec						
VTR Action		Power OFF	Power ON	When VTR changes from POWER SAVE to REC START mode, or when the servo is lost	When VTR changes from STANDBY to REC START mode, or in REC mode	At the end of tape or When VTR is put into STOP mode by itself (REC RESET signal does not appear when VTR is put into STOP mode by operating the camera)	STOP mode

Note 4 : Specifications of TAPE REM Signal

Tape Remaining (VTR)		Input Signal at Pin 25	Remark
TAPE1	TAPE2		
+5 V	+5 V	+3.4 V	
+5 V	0 V	+3.1 V	G TALLY lamp lights at +3.1 V
0 V	+5 V	+2.2 V	
0 V	0 V	0 V	

DIGITAL CA (68P FEMALE)



(EXTERNAL VIEW)

No.	SIGNAL	SPECIFICATIONS
1	Y (L) OUT	3.3 Vp-p
2	Y (2) OUT	
3	Y (4) OUT	
4	Y (6) OUT	
5	Y (8) OUT	
6	R-Y (L) OUT	3.3 Vp-p
7	R-Y (2) OUT	
8	R-Y (4) OUT	
9	R-Y (6) OUT	
10	R-Y (8) OUT	
11	B-Y (L) OUT	3.3 Vp-p
12	B-Y (2) OUT	
13	B-Y (4) OUT	
14	B-Y (6) OUT	
15	B-Y (8) OUT	
16	DIGITAL GND	GND for DIGITAL
17	DIGITAL BLANKING OUT	3.3 Vp-p
18	DIGITAL SYNC OUT	3.3 Vp-p
19	NC	No connection
20	NC	No connection
21	NC	No connection
22	NC	No connection
23	NC	No connection
24	NC	No connection
25	NC	No connection
26	NC	No connection
27	NC	No connection
28	NC	No connection
29	NC	No connection
30	NC	No connection
31	NC	No connection
32	NC	No connection
33	NC	No connection
34	18 MHz OUT (G)	GND for 18 MHz

No.	SIGNAL	SPECIFICATIONS
35	Y (1) OUT	3.3 Vp-p
36	Y (3) OUT	
37	Y (5) OUT	
38	Y (7) OUT	
39	Y (M) OUT	
40	R-Y (1) OUT	3.3 Vp-p
41	R-Y (3) OUT	
42	R-Y (5) OUT	
43	R-Y (7) OUT	
44	R-Y (M) OUT	
45	B-Y (1) OUT	3.3 Vp-p
46	B-Y (3) OUT	
47	B-Y (5) OUT	
48	B-Y (7) OUT	
49	B-Y (M) OUT	
50	DIGITAL GND	GND for DIGITAL
51	DIGITAL SAMPLE OUT	3.3 Vp-p
52	DIGITAL VD OUT	3.3 Vp-p
53	DIGITAL CF OUT	3.3 Vp-p
54	NC	No connection
55	NC	No connection
56	NC	No connection
57	NC	No connection
58	NC	No connection
59	NC	No connection
60	NC	No connection
61	NC	No connection
62	NC	No connection
63	NC	No connection
64	NC	No connection
65	NC	No connection
66	NC	No connection
67	NC	No connection
68	18 MHz OUT (X)	3.3 Vp-p

1-1-2. Connection Connector

Connection made with the connector panels during installation or service, should be made with the connectors/ complete cable assemblies specified in the following list, or equivalent parts.

Connector Name	Connection Connectors/Cables
TEST OUT (BNC)	1-560-069-11 Plug, BNC or B-B Cable assembly (cable length 1.5 m, option)
REMOTE (6P FEMALE)	1-560-078-00 Plug, 6P Male or HIROSE HR10-7PA-6P equivalent
MIC IN (3P FEMALE)	1-508-084-00 XLR, 3P Male or CANNON XLR-3-12C equivalent

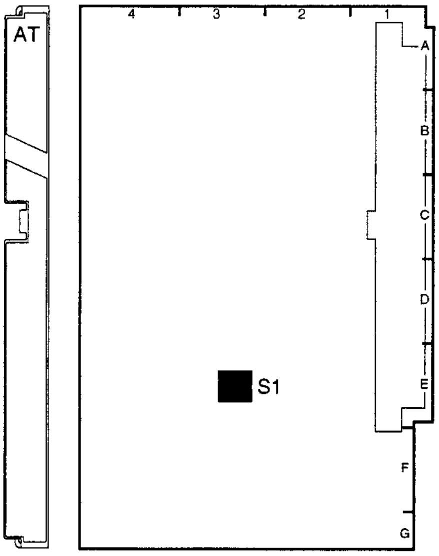
1-2. Installaton Conditions

Operating Temparature : –20°C to +45°C
Storage Temparature : –20°C to +50°C
Humidity : No condence

- Install the unit in a location as dry and well-ventilated as possible.
- Do not install the unit in the following conditions.
  High temparature room or near the heat source
  Excessive dust or mechanical vibration
  Intense magnetic and electric fields
  A place subjected to direct sunlight or strong light

1-3. Function of Internal Switches

AT-95 Board



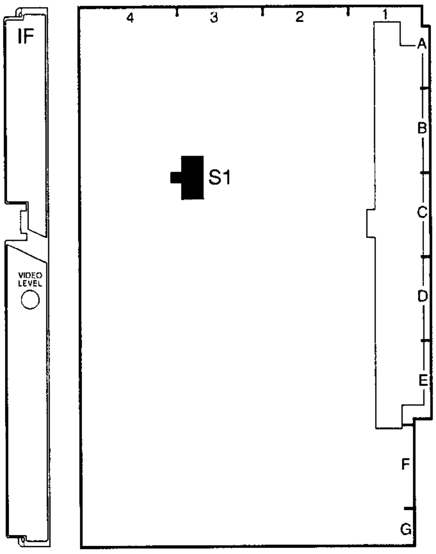
S1 : Setup menu select switch (S1-1 to S1-4)
Setup menu indicated on the viewfinder can be selected in combination of switches S1-1 to S1-4.

( ) in parentheses: Factory-set positions

				Setup Menu					
S1-1	**S1-2**	**S1-3**	**S1-4**	**Operation**	**Paint**	**Maintenance**	**Reference**	**Triming**	**Config**
OFF	OFF	OFF	OFF	YES	NO	NO	NO	NO	NO
(ON)	(OFF)	(OFF)	(OFF)	YES	YES	NO	NO	NO	NO
OFF	ON	OFF	OFF	YES	YES	YES	NO	NO	NO
ON	ON	OFF	OFF	YES	YES	YES	YES	NO	NO
OFF	OFF	ON	OFF	YES	YES	YES	YES	YES	NO
ON	OFF	ON	OFF	YES	YES	YES	YES	YES	YES

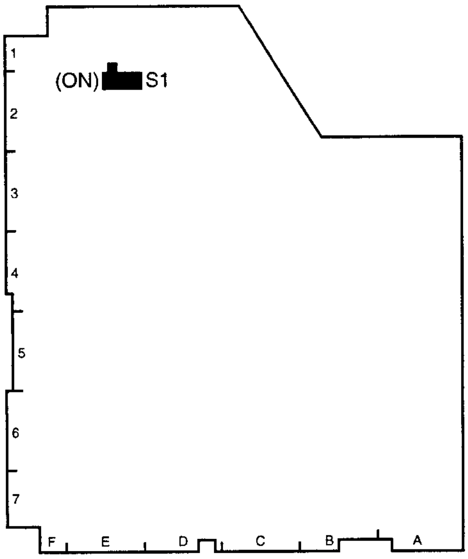
For details on the setup menu, refer to Section 3.

IF-510 Board



S1 : VF connector signal select switch
Selects an output signal at VF connector.
RET: Return video signal from CCU
GEN: Reference signal for external synchronization which is input at GENLOCK IN connector of CA
Factory-set position: RET

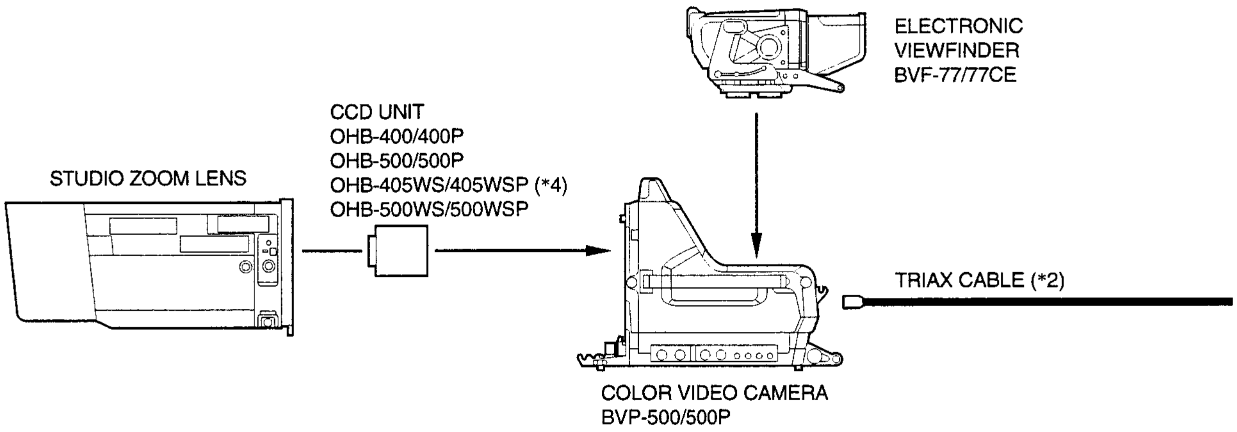
MB-602 Board

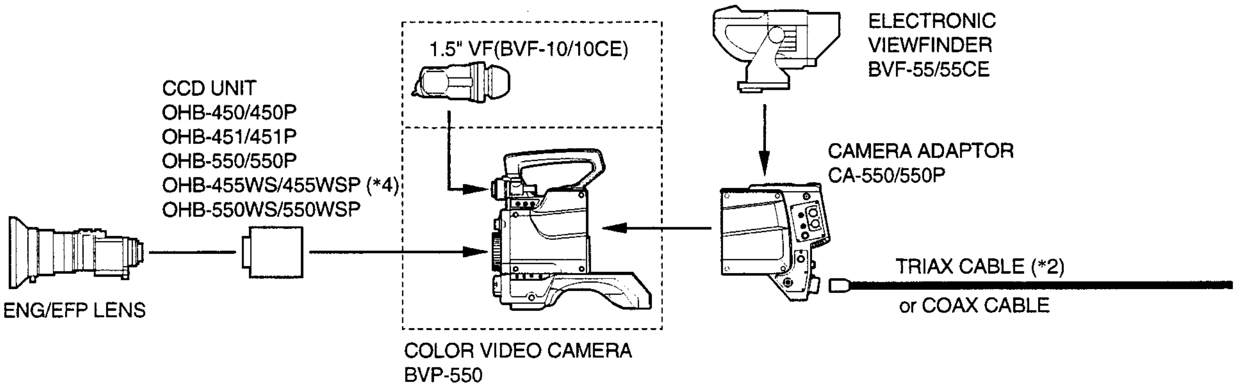


In setting a switch on MB-602 board, open the left side panel.

S1 : PHANTOM POWER switch
Turn on when connecting the PHANTOM +48 V microphone to MIC connector.
Factory-set position: ON

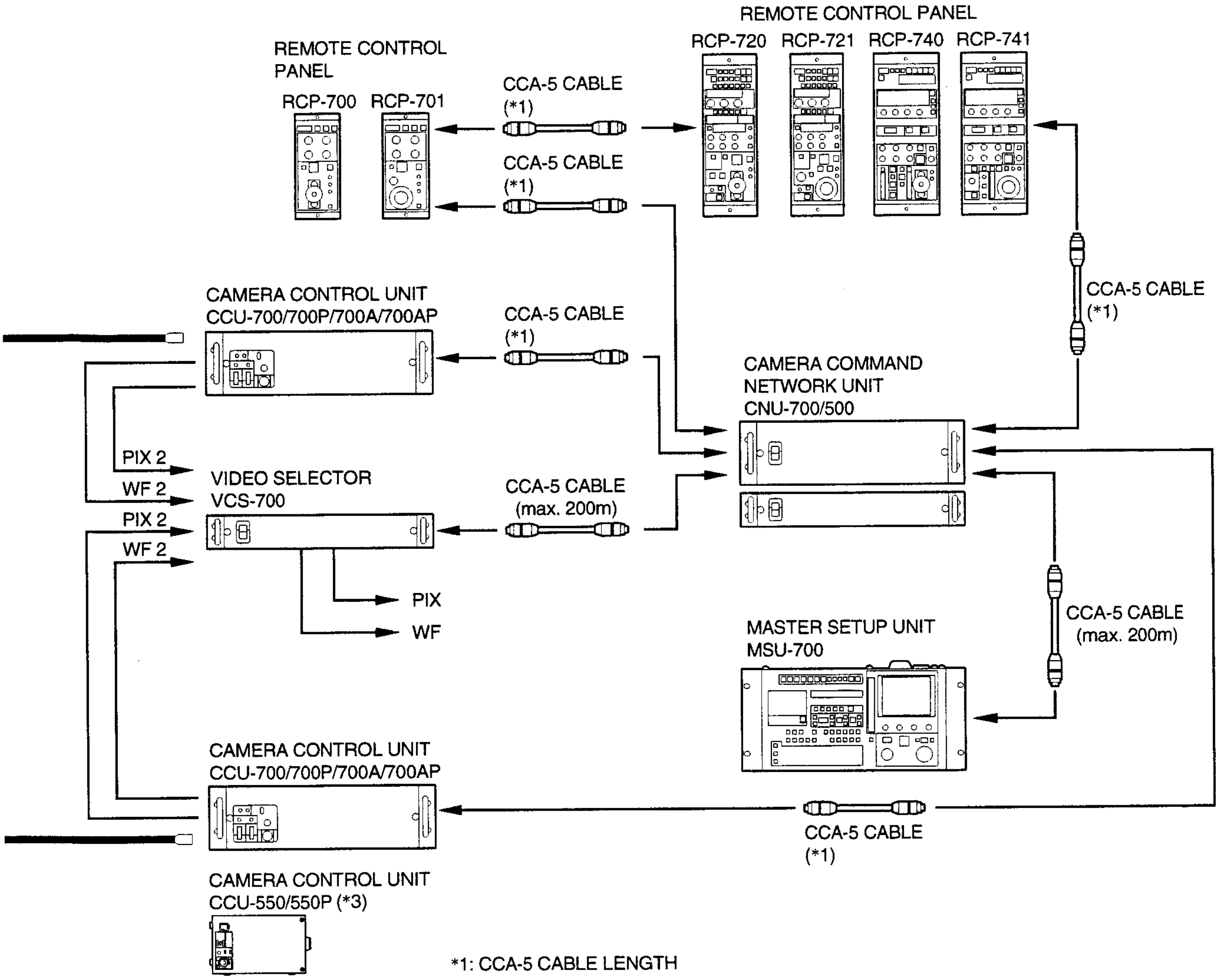
1-4. Instance of Sytem Configuration


ELECTRONIC
VIEWFINDER
BVF-77/77CE
CCD UNIT
OHB-400/400P
OHB-500/500P
OHB-405WS/405WSP (*4)
OHB-500WS/500WSP
STUDIO ZOOM LENS
TRIAX CABLE (*2)
COLOR VIDEO CAMERA
BVP-500/500P

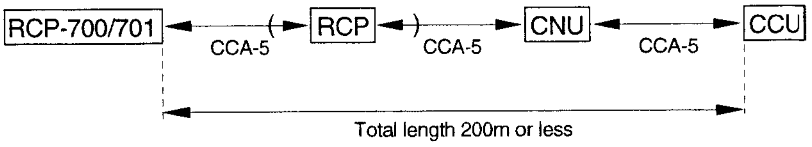

1.5" VF(BVF-10/10CE)
ELECTRONIC
VIEWFINDER
BVF-55/55CE
CCD UNIT
OHB-450/450P
OHB-451/451P
OHB-550/550P
OHB-455WS/455WSP (*4)
OHB-550WS/550WSP
CAMERA ADAPTOR
CA-550/550P
TRIAX CABLE (*2)
or COAX CABLE
ENG/EFP LENS
COLOR VIDEO CAMERA
BVP-550

OTHER OPTIONAL ACCESSORIES

For BVP-500/500P	STANDALONE UNIT BKP-5910/5910P
	SCRIPT HOLDER BKP-7911/7912
For BVP-550	ELECTRET CONDENSER MICROPHONE ECM-MS5
	MICROPHONE C-74 (Sony P/N 1-542-099-11)
	CRADLE SUSPENSION CRS-3P
	CARRYING CASE LC-303SFT
For CA-550/550P	TELEPROMPTER UNIT BKP-5971


REMOTE CONTROL PANEL
RCP-700
RCP-701
CCA-5 CABLE (*1)
CCA-5 CABLE (*1)
REMOTE CONTROL PANEL
RCP-720
RCP-721
RCP-740
RCP-741
CCA-5 CABLE (*1)
CAMERA CONTROL UNIT CCU-700/700P/700A/700AP
CCA-5 CABLE (*1)
CAMERA COMMAND NETWORK UNIT CNU-700/500
PIX 2
WF 2
PIX 2
WF 2
VIDEO SELECTOR VCS-700
CCA-5 CABLE (max. 200m)
PIX
WF
MASTER SETUP UNIT MSU-700
CCA-5 CABLE (max. 200m)
CAMERA CONTROL UNIT CCU-700/700P/700A/700AP
CCA-5 CABLE (*1)
CAMERA CONTROL UNIT CCU-550/550P (*3)

*1: CCA-5 CABLE LENGTH


RCP-700/701
CCA-5
RCP
CCA-5
CNU
CCA-5
CCU
Total length 200m or less

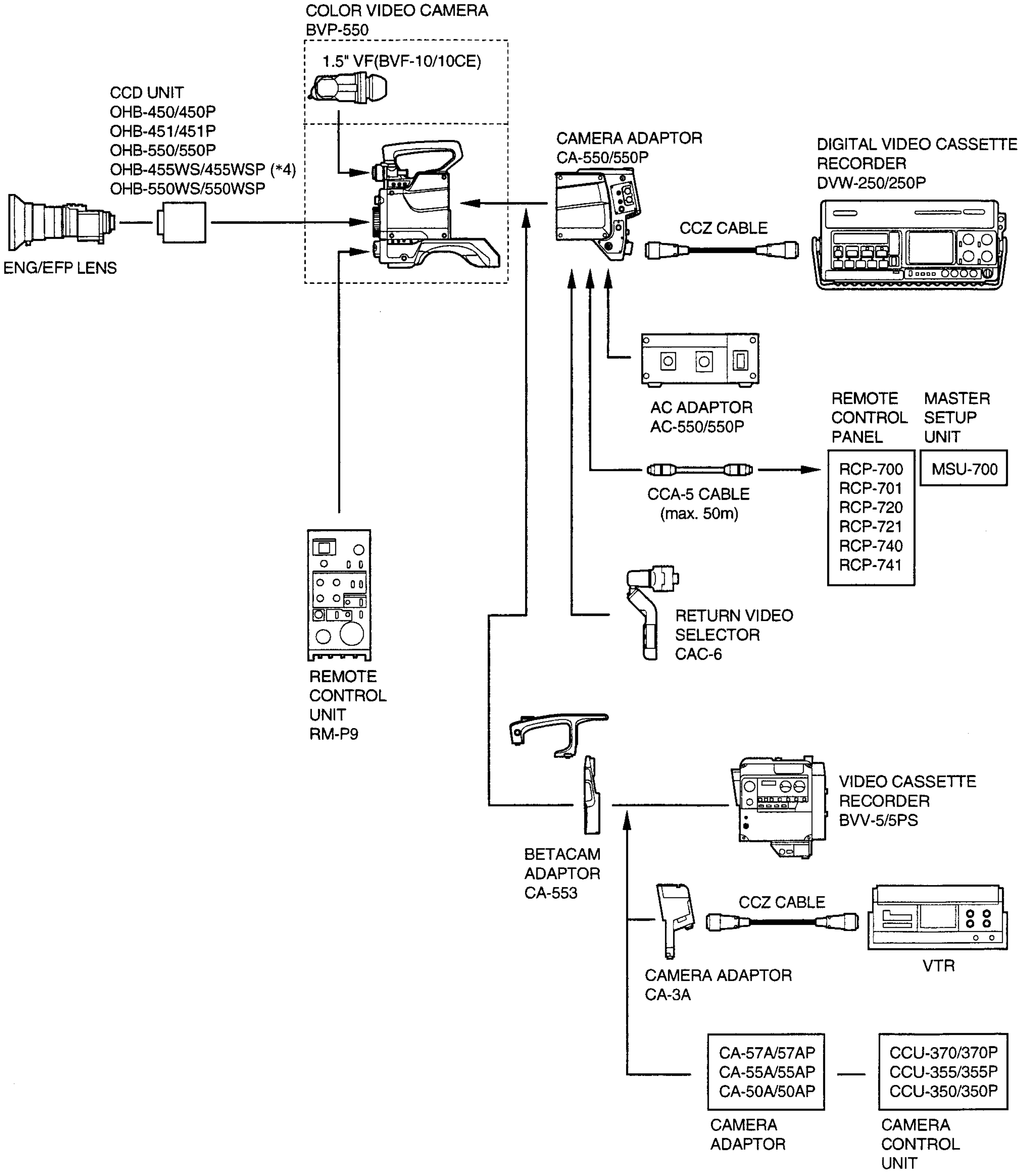
*2: TRIAX CABLE LENGTH

Diameter	Maximum length
8.5 mm	1000 m
14.5 mm	2000 m

*3: When using the CCU-550/550P in conbination with the BVP-550/550P, confirm that the ROM version of IC36/AT-95 board of the camera is Ver. 1.14 or higher.

*4: When the OHB-405WS/405WSP or OHB-455WS/455WSP is to be in the BVP-500/500P or BVP-550/550P, confirm that the ROM version of IC36/AT-95 board of the camera is Ver. 2.01 or higher.

1-4. Instance of Sytem Configuration


COLOR VIDEO CAMERA
BVP-550
1.5" VF(BVF-10/10CE)
CCD UNIT
OHB-450/450P
OHB-451/451P
OHB-550/550P
OHB-455WS/455WSP (*4)
OHB-550WS/550WSP
ENG/EFP LENS
CAMERA ADAPTOR
CA-550/550P
DIGITAL VIDEO CASSETTE
RECORDER
DVW-250/250P
CCZ CABLE
AC ADAPTOR
AC-550/550P
REMOTE
CONTROL
PANEL
MASTER
SETUP
UNIT
RCP-700
RCP-701
RCP-720
RCP-721
RCP-740
RCP-741
MSU-700
CCA-5 CABLE
(max. 50m)
RETURN VIDEO
SELECTOR
CAC-6
REMOTE
CONTROL
UNIT
RM-P9
VIDEO CASSETTE
RECORDER
BVV-5/5PS
BETACAM
ADAPTOR
CA-553
CCZ CABLE
VTR
CAMERA ADAPTOR
CA-3A
CA-57A/57AP
CA-55A/55AP
CA-50A/50AP
CCU-370/370P
CCU-355/355P
CCU-350/350P
CAMERA
ADAPTOR
CAMERA
CONTROL
UNIT

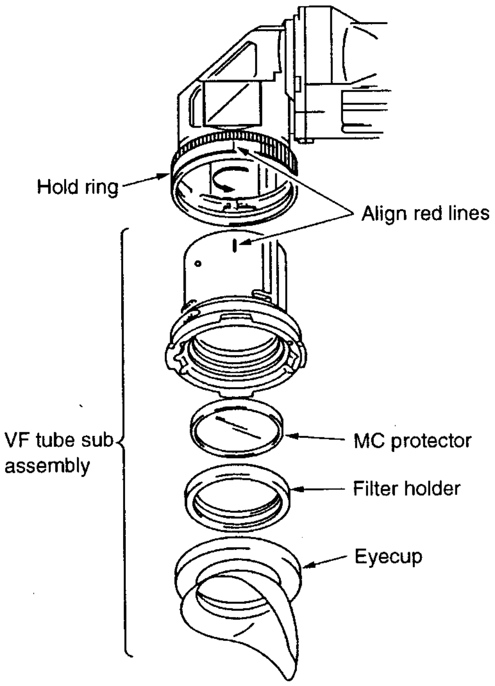
1-5. Optional Accessories for Viewfinder

The following accessories are available separately for the supplied viewfinder. Please order as necessary.

- VF Rotation Bracket BKW-401
  By fitting the BKW-401 to the camera, you can rotate the viewfinder out of the way so that your right leg does not hit the viewfinder while you are carrying the camera.

- Fog-proof Filter (Sony Part No. 1-547-341-11)
  Use in place of the MC protector shown in the figure.

- Lens Assembly for Aged Eye
  (Sony Part No. A-8262-537-A)
- Lens Assembly for Low Power
  (Sony Part No. A-8262-538-A)
- Lens Assembly (Standard magnification with special compensation for aberration)
  (Sony Part No. A-8267-737-A)
- High Performance (3X) Lens Assembly
  (Sony Part No. A-8314-798-A)
  Use in place of the VF tube sub assembly shown in the figure.



* To protect the viefinder lens from drops, put the MC protector in the filter holder and attach the eyecup securely.

Section 2
Service Overview

2-1. Notes on Service

2-1-1. Note on Replacement of Parts

Every component electrical part mounted on the PR-211 and CN-1142 boards cannot be replaced. And also a 68-pin connector on the CN-1120/1121 board cannot be. If there is any defective part, replace the mounted circuit board itself.
The PR-211 board is provided with a termination board CN-1142 on it. The CN-1142 board is necessary when the PR-212 board of OHB-550WS/550WSP is not installed. Unless the PR-212 board is installed, be sure to connect the CN-1142 board to the PR-211 board.

2-1-2. Description of EEPROM Data

The table below gives the holding data of EEPROM on every printed circuit board.

Board	Ref. No.	Holding data
VA-163	IC26	VA-163 adjustment data
AT-95	IC46	Triming/Reference files
SG-234	IC21	SG-234 adjustment data
DA-88	IC10	DA-88 adjustment data
IF-510	IC155	IF-510 adjustment data
MB-602	IC5	Model name, Serial number of the unit

Note

The IC listed above cannot be replaced because it is the EEPROM that is holding data inherent in the board. The part number listed in Section 5 "Spare Parts" is for an EEPROM which is not programmed. If replacement is needed, consult your Sony representatives.

2-1-3. Extension Boards

The extension boards and harness are available separately for check or adjustment of some printed circuit boards.

Extension Board/Harness	Sony P/N	To be extended
EX-464	J-6395-040-A	VA-163 AT-95 SG-234 DA-88 IF-510 Plug-in boards for CA

2-1-4. Notes on Repair Parts

1. **WARNING**
   Safety Related Components Warning
   Components marked ⚠ are critical to safe operation. Therefore, specified parts should be used in the case of replacement.

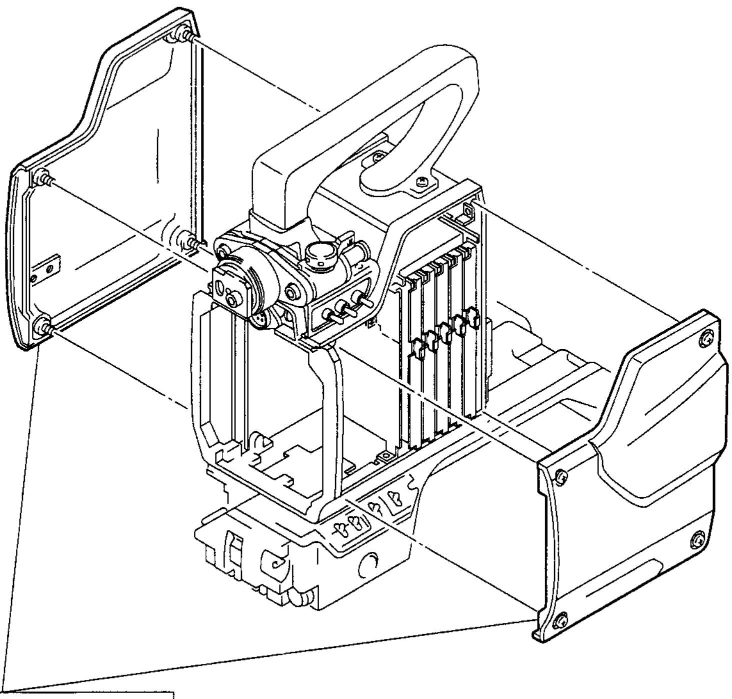
2. **Standardization of Parts**
   Some repair parts supplied by Sony differ from those used for the unit. These are because of parts commonality and improvement.
   Parts list has the present standardized repair parts.

3. **Stock of Parts**
   Parts marked with "o" at SP(Supply Code) column of the spare parts list may be not stocked. Therefore, the delivery date will be delayed.

4. **Units Representation**
   The following represented units are changed or omitted in writing.

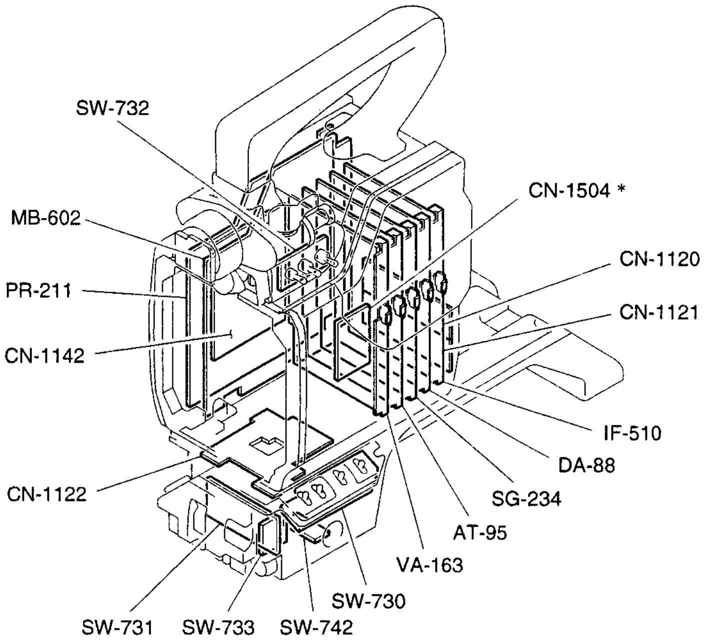
Units		Representation
Capacitance	µF	uF
Inductance	µH	uH
Resistance	Ω	Abbreviation

2-2. Removal of Cabinet



To remove the both side panels
Loosen the four screws respectively.

2-3. Location of Printed Circuit Boards


SW-732
CN-1504 *
MB-602
CN-1120
PR-211
CN-1121
CN-1142
IF-510
DA-88
CN-1122
SG-234
AT-95
VA-163
SW-730
SW-731
SW-733
SW-742

* Serial No. 16371 and higher

2-4. Circuit Description

Circuit description for the BVP-550 and CCD unit OHB-450/451/550/550W series (available separately) is described here. The BVP-550 is called as BVP, and OHB-450/451/550/550W series is called as OHB in this section.

(1) CCD Drive System (OHB)

TG-159 board

The TG-159 outputs the pulses for driving the CCD to the DR-271 board and outputs the pulses for sampling the CCD output to the PA-181 board.
The driving pulses are synchronized with the HD and VD pulses input from the BVP and are output.
Pulses are generated from the VCO clock (36 MHz) of the board. The clocks for the digital processing circuit (36 MHz, 18 MHz)are also output to the BVP.
CCD V-sub voltage, white shading data and so on are also stored in the EEPROM of the TG-159 board.

DR-271 board

The DR-271 board converts the pulses from the TG-159 board to directly drive the CCD. The converted pulses are transmitted to the CCD via the BI-91(R)/91(G)/91(B) board respectively. The board also has a circuit which makes +29 V from +15 V for the V-sub voltage. Furthermore, the board also has an interface circuit for the optical filter.

BI-91(R)/91(G)/91(B) boards

The CCDs are mounted on the BI-91(R)/91(G) /91(B) boards. These boards supply the driving pulses and control voltages to the CCD.
The signals output from the CCD are sent to the PA-181 board via the emitter follower.

PA-181 board

The PA-181 board extracts video signals from the CCD signals output from the BI-91(R) /91(G)/91(B) boards by a correlated double sampling circuit, and amplifies the R and G signals by one time, and the B signal by three times. The resultant signals are output to the VA-163 board of the BVP.

DR-302 board (OHB-451/451P only)

The DR-302 is a driving board for one optical filter disk, which motor-drives a filter selected by the RCP or MSU. The DR-302 board consists of a motor-drive circuit, and a servo circuit comprised of a selected filter detection and filter position voltage generation circuits.

(2) Video Signal System

VA-163 board

The VA-163 board amplifies the video signals output from the OHB and performs the following processings:

- Black shading correction
- Gain-up control
- Blanking cleaning
- White shading correction
- Feedback clamping
- White balancing
- Flare compensation, and
- Pre-knee

In addition, it also switches between the video signals, TEST SAW(TEST1) signal and 3-STEP TEST(TEST2) signal.

PR-211 board

The PR-211 board converts the analog R, G, and B video signals into digital signals with an A/D converter having sampling/holding functions.
It generates clocks required for the A/D conversion and the digital processings from the clocks generated by the OHB.
In addition, the PR-211 board adds a linear matrix and detail signals to the analog-to-digital-converted R, G and B signals.
It performs the processings such as pedestal control, gamma correction, knee correction and white clipping for the signals. It also performs the followings.

- Generates an internal color-bar signal and switches between this signal and the main line signals.
- Creates detail and aperture signals from digital R and G signals.
- Creates a skin tone singal.
- Detects signals for an auto iris, flare compensation, DCC, and auto white/black balancings.
- Detects black/white shadings, generates a waveform to compensate them and outputs the wavefoem to the VA-163 board.
- Detects black levels and outputs the feedback clamp voltage to the VA-163 board.
- Generates TEST SAW waveforms and output them to the VA-163 board.

- Generates a 27-MHz clock signal required for the VTR control.

The video signals that has thus been digital-processed, are then converted to Y, R-Y and B-Y signals. Some signals are output to the DA-88 board and the others are output via the MB board as a digital video signal output at the same time. The Y/C signals are generated from the Y, R-Y and B-Y signals with a color encoder IC on the PR-211 board. These signals, that were sampled at 36-MHz rate and quantized by 10 bits, are digital-to-analog converted. And the resultants are then output to the DA-88 board as a monochrome signal for VF, wide-band luminance signal, or modulated chroma signal. The monochrome signal for VF has a zebra signal for level indication, and character signal and center marker signal on it.

DA-88 board

The monochrome signal for VF (VF Y) sent from the PR-211 board goes through a lowpass filter and is output to the MB-602 board. The wide-band luminance signal Hi-Ys is output via a lowpass filter to the IF-510 board. The modulated chroma signal C goes through a black clamp circuit and lowpass filter and is added to the Hi-Ys. The resultant is output to the IF-510 board as a VBS signal.
The Y, R-Y and B-Y signals, that are input from the PR-211 board as the digital video signals, are aligned in phase with video signals in another channels by a digital delay line. The resultant is digital-to-analog converted and is then output via a lowpass filter to the IF-510 board. On the other hand, an analog component signal is generated in combination with the above-mentioned Hi-Ys signal, R-Y and B-Y signals. The analog component signal is controlled, on the level adjustment and reference signal addition, by the AT-95 board according to equipment connected to the camera (VTR or CCU). The analog component signal is output to external equipment via the 68P interface connector .

IF-510 board

Input signals at the IF-510 board are as follows;
Signals from the DA-88 board: VF Y, VBS, Y, R-Y and B-Y
Signals from external equipment: Reference signal for external synchronization, Return video signal
By combination with these signals, the IF-510 board outputs the following signals.

- VBS OUT signal
  Output via a buffer amplifier to external equipment.
- VBS OUT signal for RM
  Output to an interface connector for a remote control unit RM-P9. Using the setup menu, a character signal to confirm the menu setting can be mixed to this signal.
- TEST OUT signal
  With the signal select switch at the right top of the camera, the above-mentioned VBS or the VF Y signal can be selected as a TEST OUT signal output at the TEST OUT connector.
- VF OUT/MONI OUT signal
  The same signal is output as the VF OUT signal and the MONI OUT signal. One of the VF Y, VBS, or return video or reference signal selected by S1 on the IF-510 board, is selected. The selected signal is mixed with a center marker and safety-zone pulse, and is then output. The VF OUT signal is output at the VF connector and the MONI OUT signal is output at the 68P interface connector.
- R/G/B output signals
  The Y, R-Y and B-Y signals are converted to the R, G and B signals by a matrix circuit. The converted signals are output at the 68P interface connector.
- Y/R-Y/B-Y output signals for VF
  These signals are for a color viewfinder. A character signal and SKIN GATE signal are mixed with the above-mentioned Y, R-Y and B-Y signals. The resultants are output to the VF.

In addition, the IF-510 board is equipped with the following circuits.

- HD/VD external sync circuit
  When displaying the return video or reference signal on the viewfinder screen, it is necessary to synchronize the cursor signal with those signals. And a sync signal is separated from those signals to generate the external HD and VD signals, and the resultant is sent to the cursor signal generation circuit on the PR-211 board.
- Peak-detects the G signal and outputs to the AT-95 board.
- Transmits the SKIN GATE signal from DA-88 board to the CCU via the 68P interface connector.

(3) Auto system

AT-95 board

The AT-95 board consists of a microcomputer which controls the camera according to the instructions stored in a ROM. Operations of the board are listed below;

- Analyzes instructions of the function switches, video system detection data and analog data.
- Outputs various control signals and compensation signals to the boards.
- Outputs status information and self-diagnosis infomation as character data from the character generator.
- Incorporates the interface function with the RM-P9 or the CCU-700/700P.

(4) Pulse system

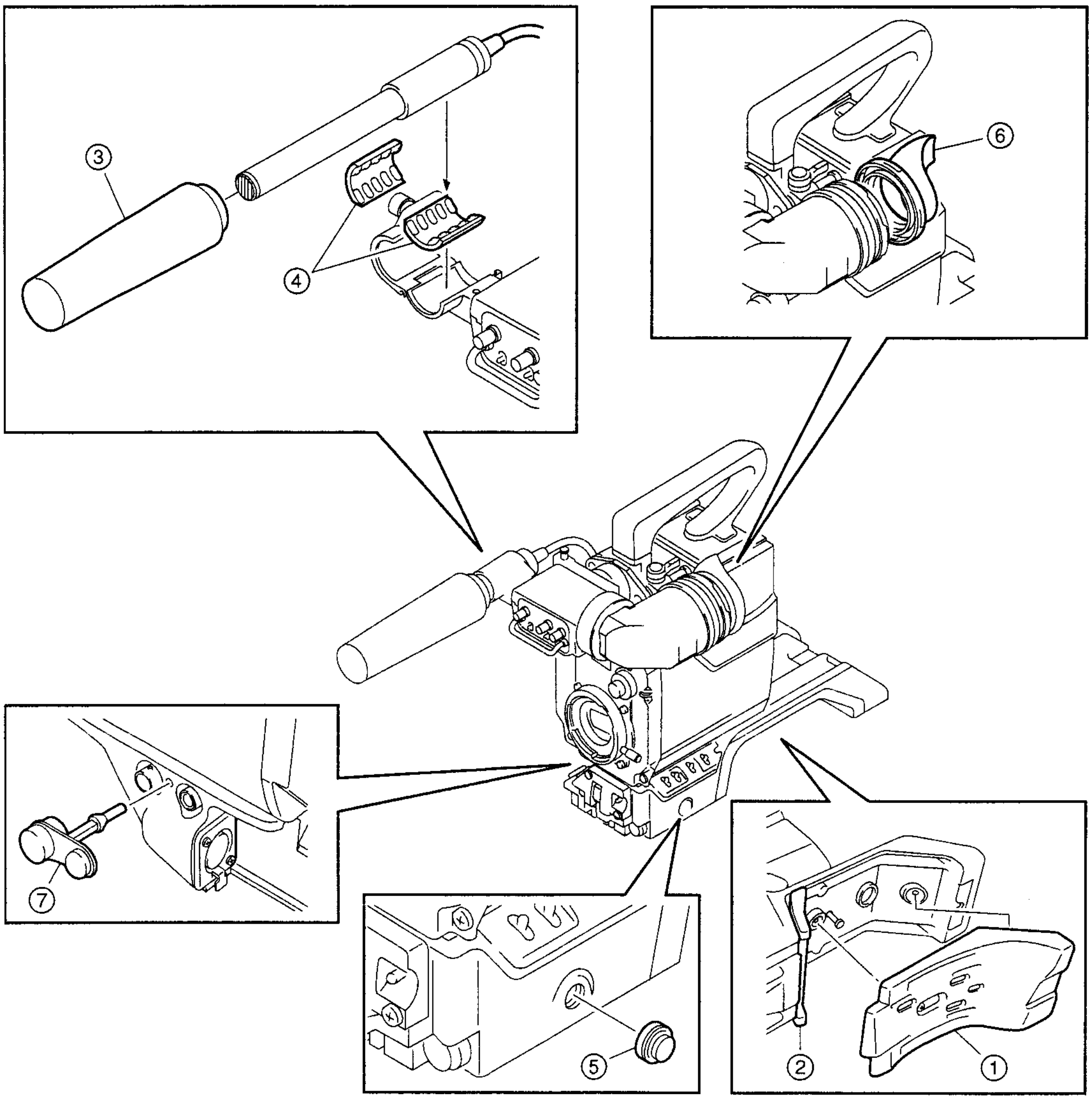
SG-234 board

The SG-234 board has a sync signal generator which generates various sync signals for the camera. The sync signals are generated from the clock pulse input from the OHB via the PR-211 board. They are output to the board of the camera, OHB and the camera adaptor (CA) respectively. This generator has two modes to synchronize with a reference signal input for external synchronization. One is a VBS input mode when the camera is used alone and the other is V RESET/H CONT mode when the CCU is connected to the camera. Input channels of the V RESET and H CONT signals differ depending on the type of CA in connection with the camera.

2-5. Periodic Replacement Part

Parts listed below are periodic replacement parts. They are subject to cracks with the lapse of time. Check sometimes by visual, and replace as necessary.

No.	Description	Sony P/N	Remarks
①	PAD ASSY (LARGE)	A-8278-237-A	
②	PAD ASSY (SMALL)	A-8278-238-A	
③	WIND SCREEN	3-708-875-0X	Supplied with VF
④	MIC CUSHION, RUBBER	3-692-138-0X	Supplied with VF
⑤	COVER, SW	3-676-244-1X	
⑥	EYE CUP	3-723-079-0X	Supplied with VF
⑦	CAP, CONNECTOR	3-692-914-1X	



2-6. Cleaning

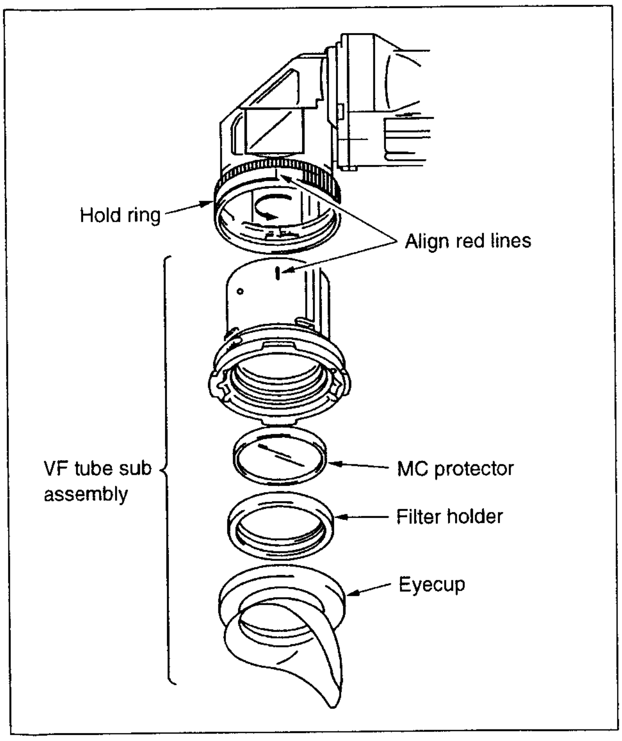
2-6-1. Cleaning of Viewfinder (Option)

By extracting VF tube sub assembly, lens and MC protector can be easily cleaned. And also dust on the CRT surface or mirror can be easily cleaned off.

1. Turn the hold ring to the left and extract the VF tube sub assembly.
2. Detach the eyecup.
3. Remove the filter holder with the MC protector installed.
4. Wipe the lens and the MC protector with a commercially available lens cleaner.
5. After the cleaning is completed, install by reversing the preceding steps. Align red lines of the VF tube and VF tube sub assembly when inserting, and turn the hold ring to the right until it locks.

Notes

- Do not use any type of solvent, such as alcohol, benzine or thinner to remove stains.
- Be sure to attach the eyecup to the VF, or the MC protector may come off.
- To protect the viewfinder lens from drops, put the MC protector in the filter holder and attach the eyecup securely.



2-6-2. Cares After Using at Special Environment

It is recommended to check the following items after gathering the news at seaside, dust area or spa.

1. Clean off sand and other dust in the unit carefully.
2. Do not allow salt in seawater or sulfur in spa to contact a not-painted surface of the cabinet. They may cause to corrode. Clean with alcohol immediately if contacted.
3. Clean the connection surface of connectors.
4. Carry out the common operation check and check that the unit normally operates.

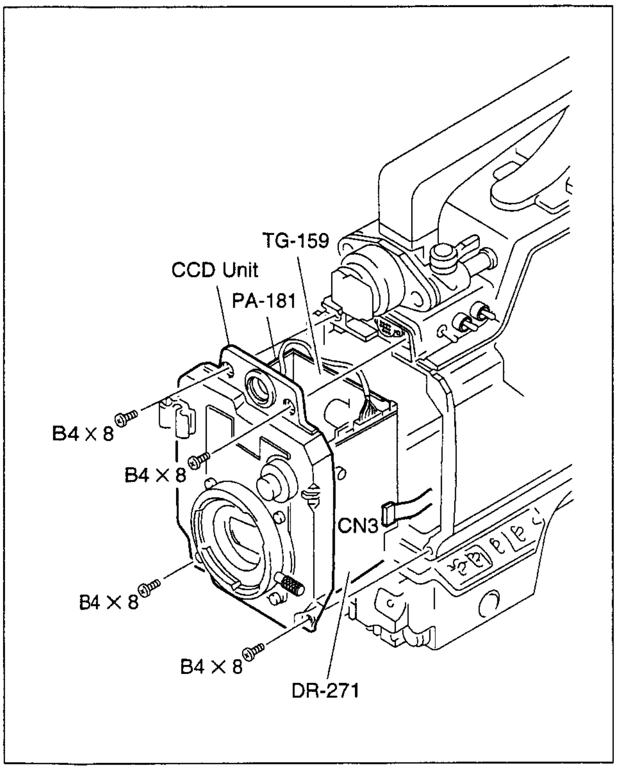
2-7. Replacement of External Connectors

2-7-1. VF Connector

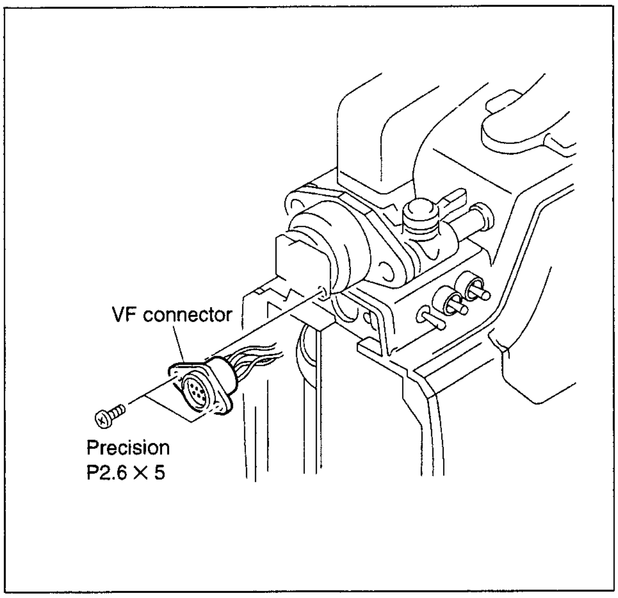
1. Remove the four screws and remove the CCD unit.
2. Disconnect the three connectors CN3 on the DR-271 board, CN3 on the TG-159 board and CN2 on the PA-181 board of the CCD unit.

   Note

   When disconnecting the flexible card wires, refer to "2-8. Disconnecting/Connecting of Flexible Card Wires".


TG-159
CCD Unit
PA-181
B4 X 8
B4 X 8
CN3
B4 X 8
B4 X 8
DR-271

3. Remove the two screws and remove the VF connector. Then unsolder it.

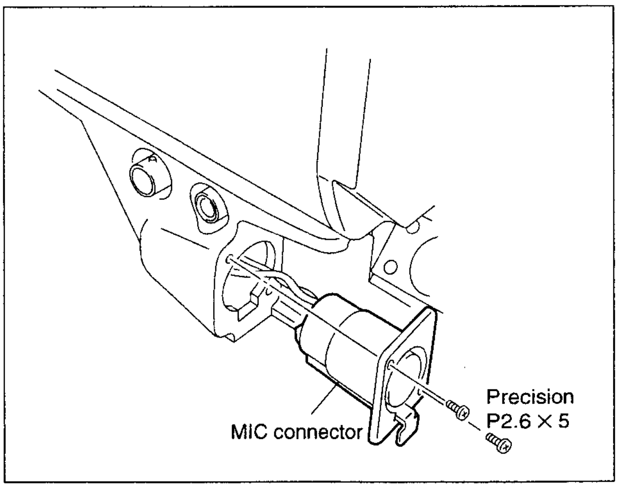

VF connector
Precision
P2.6 X 5

4. Install a new connector in the reverse procedures of removal.

2-7-2. MIC Connector

1. Remove the two screws and remove the MIC connector.

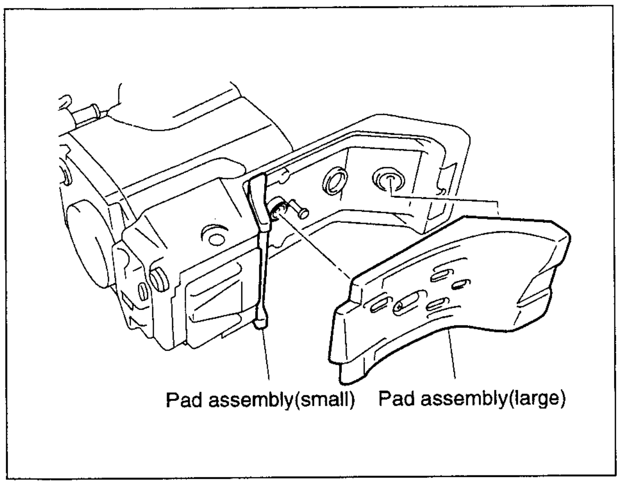
   Then unsolder it.


Precision
P2.6 X 5
MIC connector

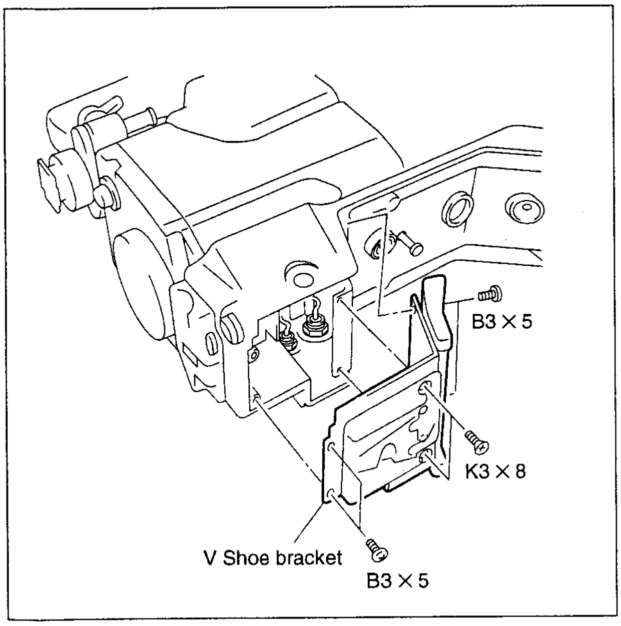
2. Install a new connector in the reverse procedures of removal.

2-7-3. TEST OUT/REMOTE Connector

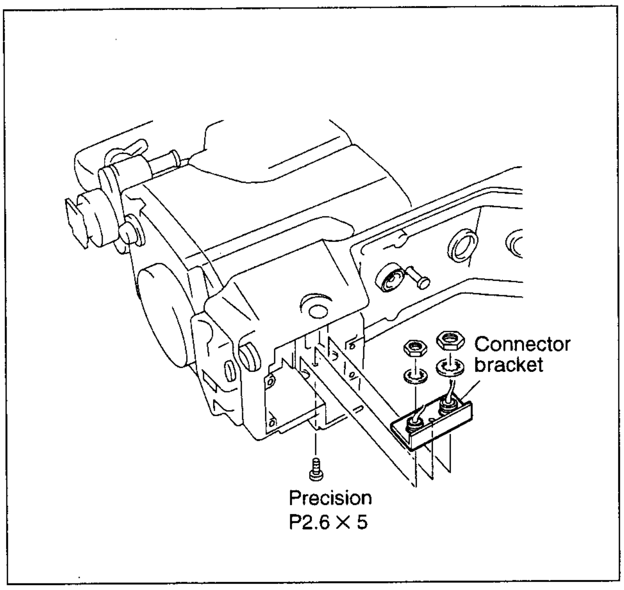
1. Remove the three screws and remove the Pad Assembly (Large).


Pad assembly(small)
Pad assembly(large)

2. Remove the seven screws and remove the V shoe bracket.


B3 × 5
K3 × 8
V Shoe bracket
B3 × 5

3. Remove the screw and remove the connector bracket.Unsolder the TEST OUT/REMOTE connector. Remove the each nut and remove the TEST OUT/ REMOTE connector.


Connector bracket
Precision
P2.6 × 5

4. Install a new connector in the reverse procedures of removal.

2-8. Disconnecting/Connecting of Flexible Card Wires

The flexible card wires are used between the MB-602 board and the CCD unit, the MB-602 board and the CN-1120/1121/1122/PR-211 boards. Be careful not to bend these wires. This shortens the wire life.

Disconnecting

1. Turn off the power of the camera.

Type A

(between the MB-602 board and CCD unit)

2. Lift up the portion A in the direction of the arrow and disconnect the flexible card wire.

Type B

(between the MB-602 board and CN-1120/1121/1122/PR-211 boards)

2. Slide portion B in the direction of the arrow and disconnect the flexible card wire.

Connecting

Notes

- Be careful not to insert the flexible card wires obliquely.
- Check that the conductive surface of the flexible card wire is not soiled with dust.

Type A

(between the MB-602 board and CCD unit)

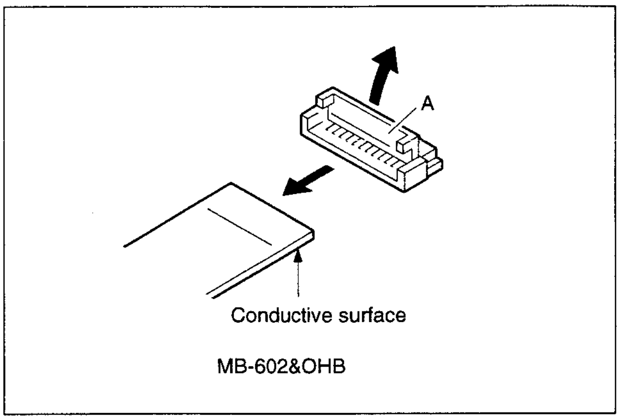
1. Lift up the portion A in the direction of the arrow. Insert the flexible card wire as far as it will go into connector with the conductive surface of the wire put down.
2. Push down the portion A to secure the flexible card wire.

Type B

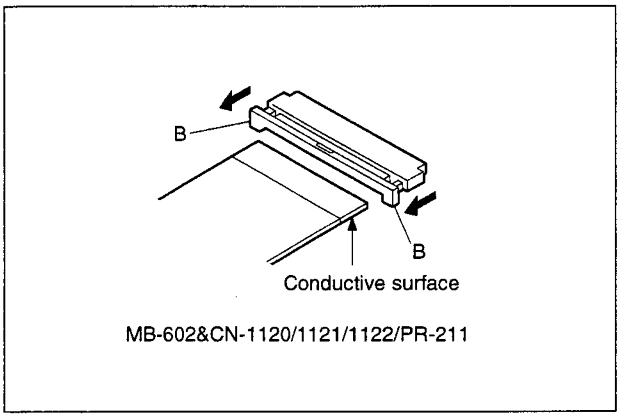
(between the MB-602 board and CN-1120/1121/1122/PR-211boards)

1. Slide portion B in the direction of the arrow and insert the flexible card wire as far as it will go into connector with the conductive surface of the wire put down.
2. Slide portion B in the opposite direction of the arrow and lock each connector.

Type A



Type B



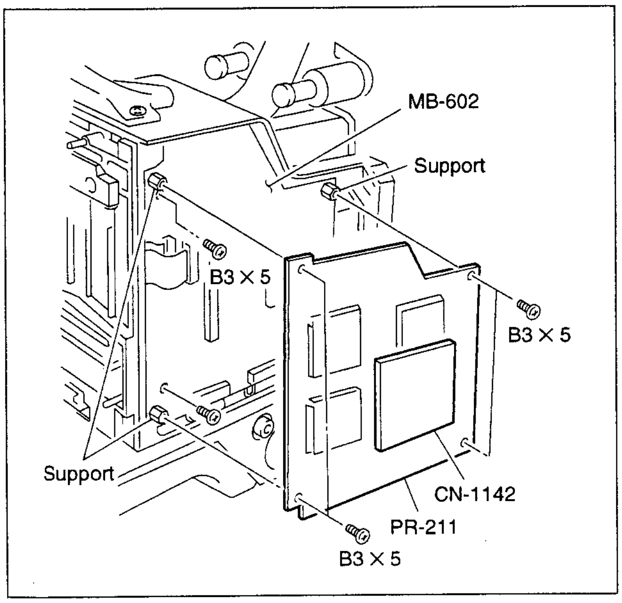
2-9. Board Replacement

2-9-1. MB-602 Board

1. Remove the right and left side panels of the camera. (Refer to "2-2. Removal of Cabinet".)
2. Pull out the five plug-in boards.
3. Remove the four screws and remove the PR-211 board.
4. Disconnect the four connectors.

   Note

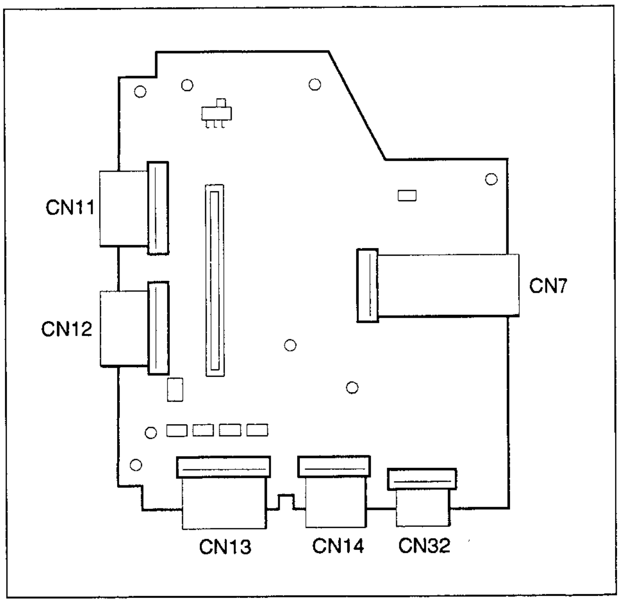
   When disconnecting the flexible card wires, refer to "2-8. Disconnecting/Connecting of Flexible Card Wires".
5. Remove the four screws and remove the four supports. Remove the MB-602 board.


MB-602
Support
B3 X 5
B3 X 5
Support
CN-1142
PR-211
B3 X 5

6. Disconnect the connectors.

   Note

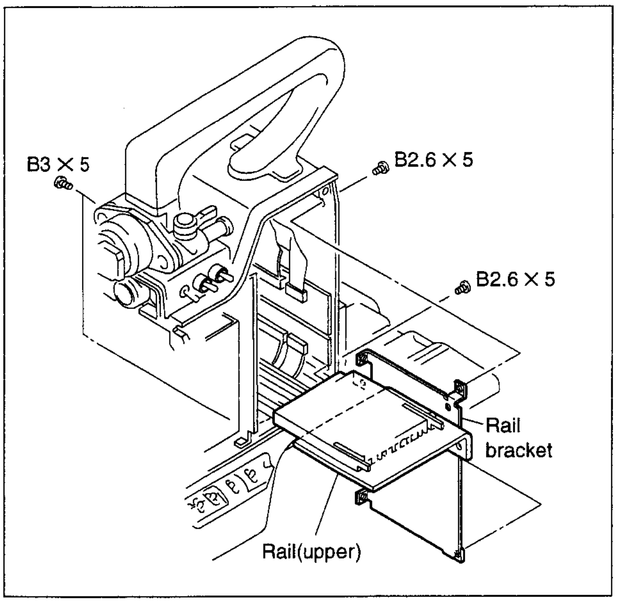
   When disconnecting the flexible card wires, refer to "2-8. Disconnecting/Connecting of Flexible Card Wires".


CN11
CN12
CN7
CN13
CN14
CN32

7. Install a new board in the reverse procedures of removal.

2-9-2. CN-1120/1121 Board

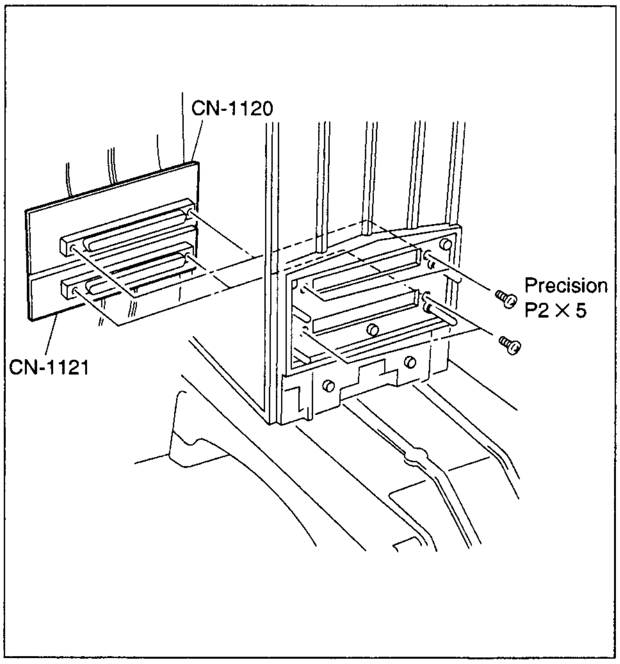
1. Remove the right side panel of the camera. (Refer to "2-2. Removal of Cabinet".)
2. Pull out the five plug-in boards and the four shielding plates.
3. Remove the DC/DC convertor unit.
   (Refer to "2-11. Replacement of DC/DC Convertor Unit".)
4. Remove the rail(upper).
5. Remove the four screws and remove the rail bracket.



6. Remove the two screws and remove the CN-1120/1121 board.
7. Disconnect the connector.

Note

When disconnecting the flexible card wires, refer to "2-8. Disconnecting/Connecting of Flexible Card Wires".

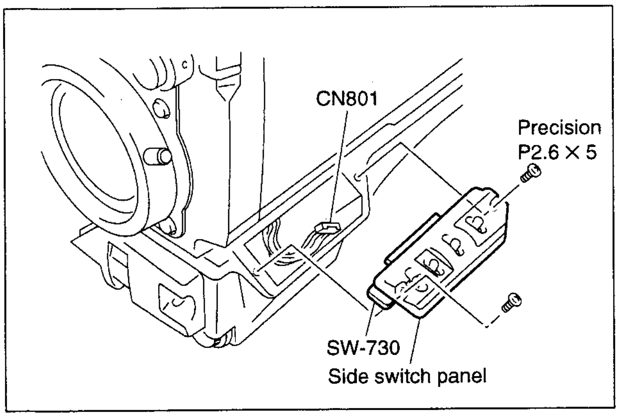


8. Install a new board in the reverse procedures of removal.

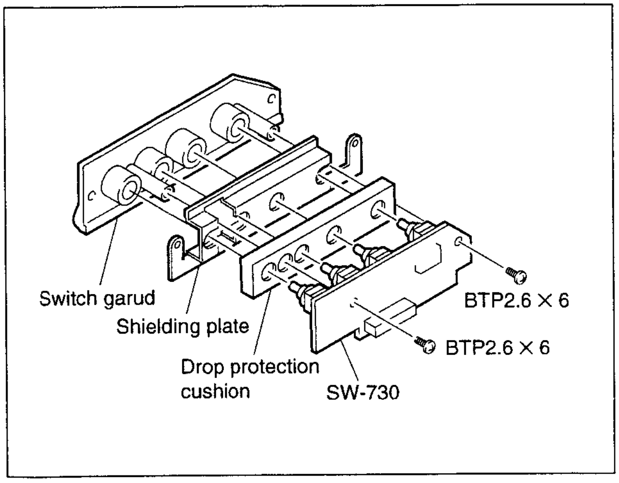
2-10. Replacement of Function Switches

2-10-1. Side Switch Panel Block

1. Remove the two screws and remove the side switch panel.
2. Disconnect the connector CN801 on the SW-730 board.


CN801
Precision
P2.6 X 5
SW-730
Side switch panel

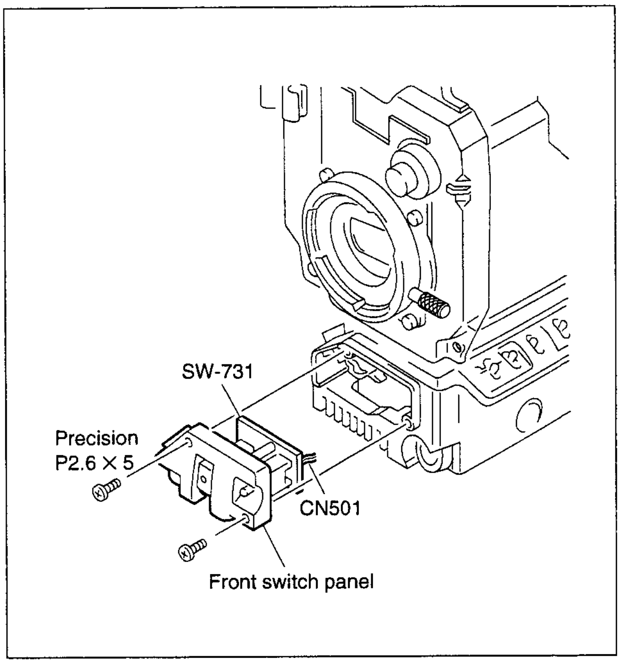
3. Remove the two screws.Remove the SW-730 board, shielding plate and drop protection cushion.
4. Unsolder the terminals and remove the switch to be replaced.


Switch garud
Shielding plate
Drop protection
cushion
SW-730
BTP2.6 X 6
BTP2.6 X 6

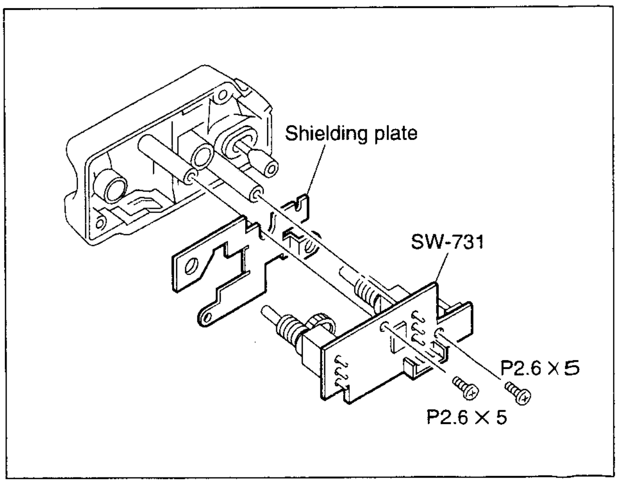
5. Install a new switch in the reverse procedures of removal.

2-10-2. Front Switch Panel Block

1. Remove the two screws and remove the front switch panel.
2. Disconnect the connector CN501 on the SW-731 board.


SW-731
Precision
P2.6 X 5
CN501
Front switch panel

3. Remove the two screws.Remove the SW-731 board, knob packing, VR knob and shielding plate.
4. Unsolder the terminals and remove the switch to be replaced.


Shielding plate
SW-731
P2.6 X 5
P2.6 X 5

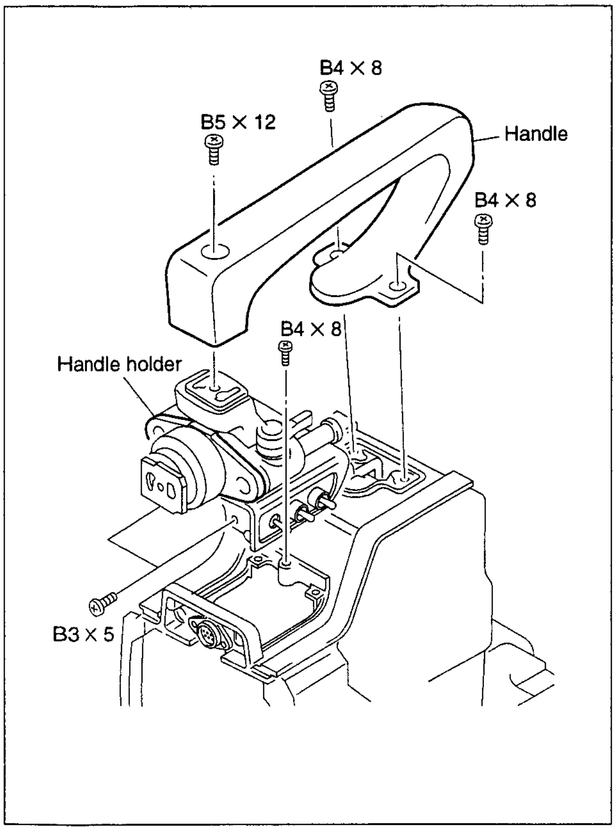
5. Install a new switch in the reverse procedures of removal.

2-10-3. VF DISP Switch

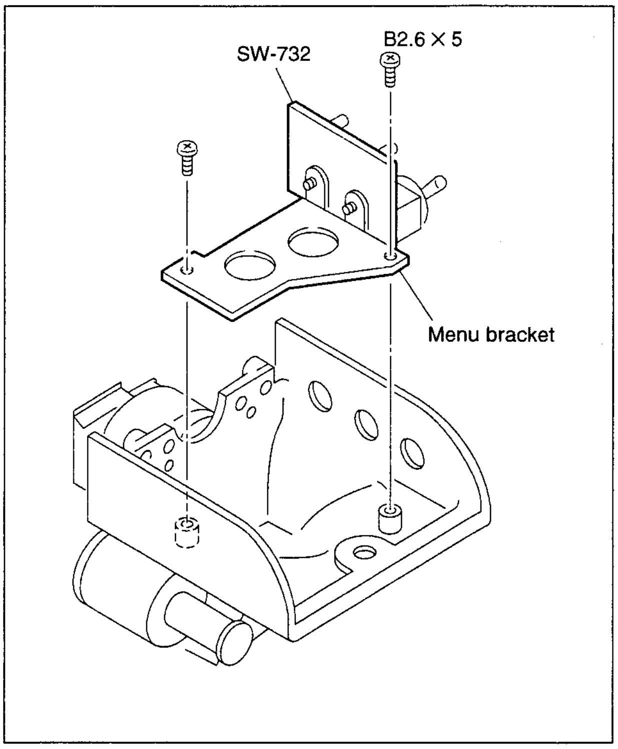
1. Remove the four screws and remove the CCD unit referring to "2-7-1. VF Connector".
2. Disconnect three connectors CN3 on the DR-271 board, CN3 on the TG-159 board and CN2 on the PA-181 board.

   Note

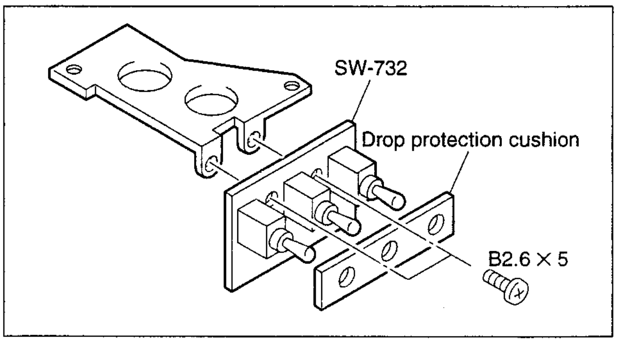
   When disconnecting the connectors, refer to "2-8. Disconnecting/Connecting of Flexible Card Wires" and "2-7-1. VF Connector".
3. Remove the three screws and remove the handle.
4. Remove the three screws and remove the handle holder.


B4 × 8
B5 × 12
Handle
B4 × 8
B4 × 8
Handle holder
B3 × 5

5. Remove the two screws and remove the menu bracket.


SW-732
B2.6 × 5
Menu bracket

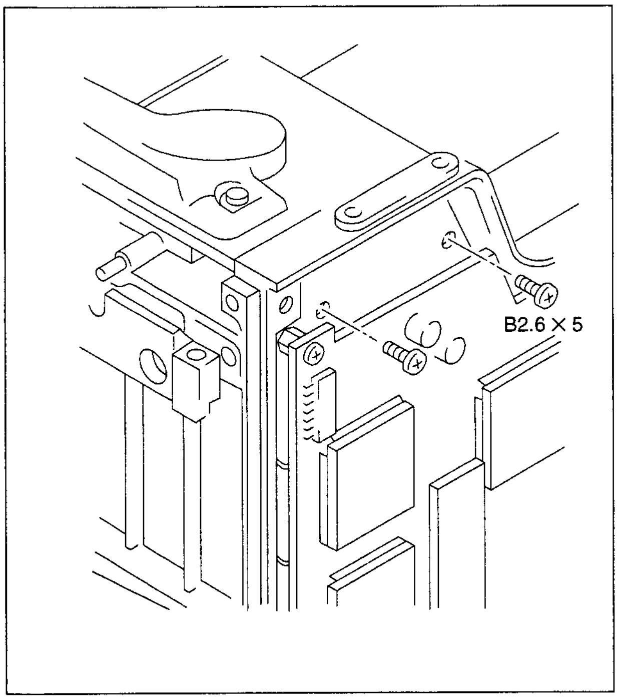
6. Remove the two screws and remove the SW-732 board and the drop protection cushion.
7. Unsolder the terminals and remove the switch to be replaced.


SW-732
Drop protection cushion
B2.6 × 5

8. Install a new switch in the reverse procedures of removal.

2-11. Replacement of DC/DC Convertor Unit

1. Remove the right and left side panels of the camera. (Refer to "2-2. Removal of Cabinet".)
2. Remove the two screws on the left side of the camera shown in the figure.

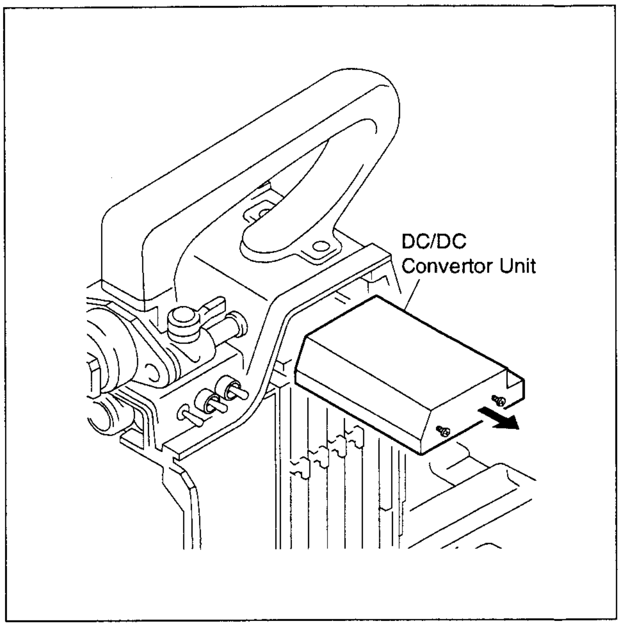


3. Thread the two screws that were removed in Step 2, into the holes of the DC/DC convertor unit three turns.

Note

Never turn the two screws more than three turns.

4. Hold the two screws with hands and remove the DC/DC convertor unit.



5. Install a new DC/DC convertor unit pushing with hands.
Secure it to the MB-602 board with the two screws that were removed in Step 2.

Section 3
Setup Menu

3-1. Setup Menu

The Setup menu is used to select settings of camera operation, select items to be displayed on the viewfinder screen, and select the way the items are displayed.
It is also used for adjustment. The menu appears on the viewfinder screen.
By changing a setting through this menu, the same signal as output to the viewfinder is enabled to be output at the TEST OUT connector.

• Configuration of the Setup Menu

The setup menu consists of the following menus

- Operation menu
- Paint menu
- Maintenance menu
- Reference menu
- Triming menu
- System config menu

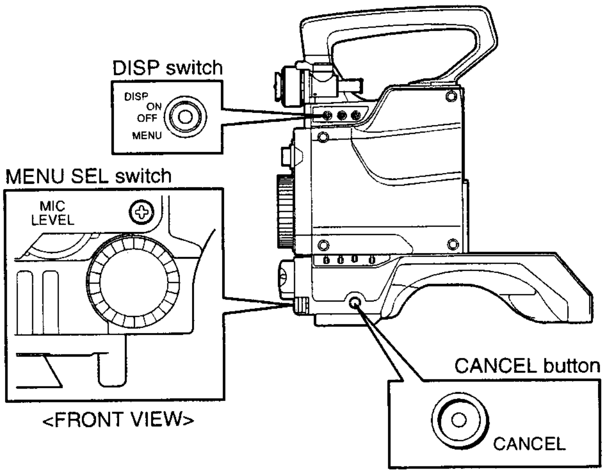
Operation and Paint menus are normally accessible. To display the other menus, switch setting of the AT-95 board is required. For details, refer to Section 1-3. "Function of Internal Switches—AT-95 board"

• Equipment required

CCD Unit	OHB-450/550 series
Camera Adaptor	CA-550/550P

Supply power from a camera control unit CCU-700/700P, AC adaptor AC-550/550CE or VTR.

• Switches and Button



DISP switch

ON : Displays characters and messages indicating the video camera settings and operation status.
OFF : No character or marker display appears on the viewfinder screen.
MENU : The setup menu appears on the viewfinder screen.

MENU SEL switch

Selects the menu item or setting value displayed on the viewfinder screen.

CANCEL button

Cancels the contents of a menu setting, or returns to the page select mode or TOP menu.

Note

The TOP menu screen indicates the entire configuration of menu items.
To display the TOP menu, set the DISP switch to MENU (from OFF) while holding down the MENU SEL switch.

- **Basic Operation**

1. Displaying the menu
   To display the Operation menu, set the DISP switch to MENU.
   To display the other menus than the Operation menu, first of all, the TOP menu shall be displayed. To display the TOP menu, set the DISP switch to MENU while holding down the MENU SEL switch. Then turn the MENU SEL switch to move the cursor to a menu item which you want and press the MENU SEL switch.
2. To shift the page, turn the MENU SEL switch with a page scroll bar displayed at the top-right of the screen until the desired page is displayed and press the MENU SEL switch.
   The menu enters the item select mode and the page scroll bar disappears.
3. To shift the item, turn the MENU SEL switch until the → cursor points the item to be set and press the MENU SEL switch.
4. To change the value, turn the MENU SEL switch. You can change the values quickly by turning the MENU SEL switch fast. You can make very fine adjustments by turning the switch slowly. By pressing the MENU SEL switch, the setting is entered.
5 The menu page is returned to the item select mode or page select mode every time the CANCEL button is pressed.
6. To exit from the setup menu, set the DISP switch to OFF.

- **ROM version**

Contents in the menu and factory settings may differ from the descriptions in this manual depending on the version of ROM (IC36) on the AT-95 board.
In this section, an item under "Ver." in the table shows a ROM version. If any version is given, it shows that the function for the item is added or changed, and the ROM with that version or higher version supports the function. If no version is given, it shows that every ROM version supports the function.
To confirm the ROM version easily proceed as follows:

1. Set the DISP switch to OFF.
2. Power the unit on while holding down the MENU SEL switch. The indication of ROM version is displayed for about three seconds.

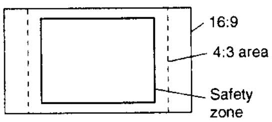
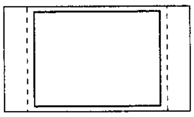
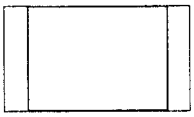
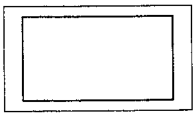
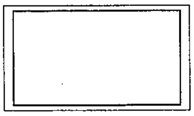
3-1-1. Operation Menu

This menu contains items contained for changing camera settings to suit shooting conditions during normal camera operations.

(Boxed items under "Settings" indicate the factory setting.)

Page	Ver.	Item	Settings	Contents
VF DISPLAY		ZOOM	$\boxed{\text{ON}}$, OFF	Turns on and off the indications of zoom position and lens extender.
		SHUTTER	$\boxed{\text{ON}}$, OFF	Turns on and off the indications of shutter speed and mode.
		IRIS	$\boxed{\text{ON}}$, OFF	Turns the iris setting indication on and off.
		AUDIO	$\boxed{\text{ON}}$, OFF	Turns the audio level indication on and off. (Automatically turned OFF in connection with CCU/RCP)
		TAPE	$\boxed{\text{ON}}$, OFF	Turns the tape-remaining indication on and off. (Automatically turned OFF in connection with CCU/RCP)
		ZEBRA	ON, OFF	Turns the zebra indication on and off. (Corresponds to the ZEBRA switch of VF connected to the camera.)
		MESSAGE	$\boxed{\text{ON}}$, OFF	Turns on and off the indication of message in changing each setting of filter, white balance memory, gain value, DCC(auto knee) and shutter speed. The indication is displayed within three seconds in the center of the viewfinder screen.
		MODE	CHG, $\boxed{\text{USR}}$	CHG : The indications of the optical filter, white balance memory and gain value are displayed only when they differ from the standard settings (FILTER:1B, WHITE:A, GAIN:0dB) USR : The indications are displayed corresponding to the settings on the VF DISPLAY page.
		FILTER	*, $\boxed{\text{ON}}$, OFF	Turns the optical filter indication on and off.
		WHITE	*, $\boxed{\text{ON}}$, OFF	Turns the white balance memory indication on and off.
		GAIN	*, $\boxed{\text{ON}}$, OFF	Turns the gain value indication on and off.
MARKER		CENTER	$\boxed{\text{ON}}$, OFF	Turns the center marker indication on and off.
		SAFETY ZONE	80%, $\boxed{\text{90\%}}$, OFF	Turns the safety zone marker indication on and off and selects the area indicated by that marker. [a]
		BOX CURSOR	ON, $\boxed{\text{OFF}}$	Turns the box cursor indication on and off.
		BOX H POS	-99 to 99 ($\boxed{0}$)	Shifts horizontally the location of the box cursor on the screen.
		BOX V POS	-99 to 99 ($\boxed{0}$)	Shifts vertically the location of the box cursor on the screen.
		BOX WIDTH	00 to 99 ($\boxed{41}$)	Sets the width of the box cursor.
		BOX HEIGHT	00 to 99 ($\boxed{10}$)	Sets the height of the box cursor.

a) In the 16:9 mode, the following kinds of safety zone marker can be selected in combination of the settings of "SAFETY ZONE" and "4:3 SAFETY".

		SAFETY ZONE		
		80%	90%	OFF
4:3 SAFETY	ON			
	OFF			Not indicated

Page	Ver.	Item	Settings	Contents
GAIN SW		LOW	-3, $\boxed{0}$, 3, 6, 9, 12, 18, 24, 30 dB	Selects the gain value for each gain switch position. (LOW, MIDDLE, HIGH)
		MID	-3, 0, 3, 6, $\boxed{9}$, 12, 18, 24, 30dB	
		HIGH	-3, 0, 3, 6, 9, 12, $\boxed{18}$, 24, 30dB	
WIDE SCREEN (For OHB-550WS /550WSP)		16:9/4:3 MODE	$\boxed{16:9}$, 4:3	Selects the aspect ratio for the video signal output. (This setting is valid only when the camera is used alone.)[b]
		VF ASPECT	$\boxed{\text{AUTO}}$, 4:3	Selects the aspect ratio for the viewfinder indication. AUTO: Automatically selects according to the aspect ratio selected by 16:9/4:3 MODE on the WIDE SCREEN page. 4:3 : Selects 4:3 regardless of the 16:9/4:3 MODE setting.
		4:3 SAFETY	ON, $\boxed{\text{OFF}}$	Selects whether the safety zone marker showing the 4:3 area is indicated in the 16:9 mode, or not.[a]
		16:9 ID ON VF	ON, $\boxed{\text{OFF}}$	Turns on and off the 16:9 indication in the 16:9 mode on the viewfinder screen. (This setting is valid only when the DISP switch is set to on or off.)
		16:9 ID ON BARS	ON, $\boxed{\text{OFF}}$	Selects whether the 16:9 indication is displayed on the internal color-bar in the16:9 mode, or not. (This setting is valid only when the DISP switch is set to on or off.)
MON OUT		BNC TEST OUT	$\boxed{\text{VBS}}$, RM, VF Y	Selects a video signal to be output at TEST OUT connector. VBS : Color composite signal RM : The same as a signal ouput to RM-P9 Y : Y(monochrome) signal
		RM/MON CHAR	$\boxed{\text{ON}}$, OFF	Selects whether character signals displayed on the viewfinder screen are mixed with the VBS signal to be output to RM-P9, or not. Turning on is convenient to operate the setup menu by RM-P9.
		VBS LOCK	ON, $\boxed{\text{OFF}}$	Used to prevent misoperation by ENC/RGB switch. ON : ENC signal is output at TEST OUT connector regardless of ENC/RGB switch setting. OFF : A signal selected by ENC/RGB switch is output.
		VF VIDEO MODE	$\boxed{\text{Y}}$, MIX, NAM	Selects a video signal to be output to the viewfinder. Y : Y=0.3R+0.59G+0.11B; The same as a camera output signal MIX : Y=0.33R+0.33G+0.33B NAM : Selects one of the R, G, and B signal that is maximum in level.
		[RGB]-G	ON, $\boxed{\text{OFF}}$	Sets signals selectable by RGB switch. ON : R-G, B-G OFF : R, G, B
AUTO IRIS AUTO KNEE (DCC)		IRIS OVERRIDE	-99 to 99 ($\boxed{0}$)	Sets the reference value for automatic iris adjustment. -99 (further closed) ↔ 99 (further opened)
		IRIS OVERRIDE	ON, $\boxed{\text{OFF}}$	Turns the auto-iris override function on and off.
		APL RATIO	-99 to 99 ($\boxed{0}$)	Sets the way the iris is automatically adjusted. -99 (PEAK) ↔ 99 (AVERAGE)
		AUTO KNEE POINT	-99 to 99 ($\boxed{\text{XX}}$)	Sets the point on which the knee function starts to have effect in the auto-knee mode.
		AUTO KNEE SLOPE	-99 to 99 ($\boxed{\text{XX}}$)	Sets the volume of the effect of the knee function in the auto-knee mode.

[b] The change of aspect ratio using this menu is disabled because the CCU' s setting has a priority when the CCU is connected.
If you want to change the aspect ratio when the CCU is connected, use the OTHERS page of the Paint menu. When you attempt to change using this menu, a message "Use Paint MNU" is displayed.

Page	Ver.	Item	Settings	Contents
STAND ALONE		H PHASE	-99 to 99 (XX)	Sets the horizontal phase of the camera in the genlock mode.
		SC PHASE	0 to 360(XX)	Sets the subcarrier phase of the camera in the genlock mode.
		CABLE COMP	ON, OFF	Turns on and off the cable compensation circuit for the external sync signal in the genlock mode.
		SNG BARS	ON, OFF	Turns the color-bar signal for SNG on and off.
		MASTER BLACK	-99 to 99 (0)	Adjusts the MASTER BLACK level.
		IRIS OVERRIDE	ON, OFF	Turns the auto-iris override function on and off.
		CF PULSE	ON, OFF	Turns on and off the color framing pulse supplied to the VTR.
		SKIN DETAIL	ON, OFF	Turns the skin tone detail function on and off.
	1.10	AUTO HUE	Press MENU SEL switch to execute.	Sets the skin detail hue function automatically. (Locate the desired skin color within the gate marker of VF and measure.)
AUTO SETUP		AUTO BLACK	Press MENU SEL switch to execute.	Starts to automatically adjust the black balance. (To abort a processing during execution, press MENU SEL switch.)
		AUTO WHITE	Press MENU SEL switch to execute.	Starts to automatically adjust the white balance.
		LEVEL AUTO	Press MENU SEL switch to execute.	Starts to automatically adjust the level in the internal circuits. c) (To abort a processing during execution, press MENU SEL switch.)
		TEST	1, 2, OFF	Selects the test signal. 1 : Outputs the sawtooth waveform test signal 2 : Outputs 3-step waveform test signal OFF : No test signal is output.
DIAGNOSIS		OHB	OK, NG	Displays a state of communication for control data between the OHB block and CPU on AT board.
		PR	OK, NG	Displays a state of communication for control data between the PR board and CPU on AT board.
		VA	OK, NG	Displays a state of communication for control data between the VA board and CPU on AT board.
		AT	OK, NG	Displays a state of communication for control data between the CPU and memory on AT board.
		SG	OK, NG	Displays a state of communication for control data between the SG board and CPU on AT board.
		DA	OK, NG	Displays a state of communication for control data between DA board and CPU on AT board.
		IF	OK, NG	Displays a state of communication for control data between IF board and CPU on AT board.
		MD	OK, NG	Displays a self-diagnosis result of MD board (of camera adaptor).
		AU	OK, NG	Displays a self-diagnosis result of AU board (of camera adaptor).
		TR	OK, NG	Displays a self-diagnosis result of TR board (of camera adaptor).

c) When executing the LEVEL AUTO, data set through the menu is all cleared and the automatic level adjustment is performed in sequence, After the adjustment is complete, adjustment result is stored as a master setup data.

1. A reference file which is reference for adjustment is loaded .
2. Lens is autmatically closed and the black balance is automatically adjusted.
3. The white balance is automatically adjust using TEST 2 (3-step) signal.

Notes

This white balance adjustment compensates a drift of the gain of an amplifier, does not compensate color temperature for an actual object.
The gamma and knee compensation values do not change with a lapse of time because of the digital-processing camera.
Therefore, the gamma and knee compensation values remains the values stored in the reference file.

Page	Ver.	Item	Settings	Contents
CAMERA ID		No.	1 to 96 ($\boxed{\text{X}}$)	Sets a camera number in the range of 1 to 96. (When no camera number is set, "- -" is displayed.)
		ID: □ □ □ □ □ □ □		Sets a camera ID of up to ten alphanumerics, symbols, and spaces.
	1.10	No. / ID ON BARS	CAM No., CAM ID, $\boxed{\text{OFF}}$	Selects whether the camera number or ID is mixed with a camera output signal only in the color-bar mode, or not. (This setting is valid only when the DISP switch is set to on or off.)
LENS FILE	1.10	CENTER H POS	–20 to 20 ($\boxed{\text{XX}}$)	Shifts horizontally the location of the center marker on the screen. 20 (right) ↔ –20 (left)
	1.10	CENTER V POS	–20 to 20 ($\boxed{\text{XX}}$)	Shifts vertically the location of the center marker on the screen. 20 (up) ↔ –20 (down)
	1.10	CENTER POS STORE	Press MENU SEL switch to execute.	Stores the location of the center marker at present in the selected lens file number.
	1.10	No.	$\boxed{0}$ to 15	Selects a lens file. [d] (Example) No. : 1 ← Lens file number (0 to15) Lens : 27 : A14x8BERM ← Lens name EX : 1.0 ← Lens extender value

d) Select a lens file appropriate for the mounted lens from 16 kinds of the lens files which are stored in the RAM IC26/AT-95 board.
An additional data such as a center marker is also stored in the selected lens file.

3-1-2. Paint Menu

The Paint menu is used for white and other paint adjustments items. To activate the Paint menu, first display the TOP menu.

(Boxed items under "Settings" indicate the factory setting.)

Page	Ver.	Item	Settings	Contents
VIDEO LEVEL		WHITE R/G/B	–99 to 99 ($\boxed{0}$)	Adjusts the R, G, B gain level.
		BLACK R/G/B/M	–99 to 99 ($\boxed{0}$)	Adjusts the R, G, B master black level.
		FLARE R/G/B	–99 to 99 ($\boxed{0}$)	Adjusts the R, G, B flare level.
		GAMMA R/G/B/M	–99 to 99 ($\boxed{0}$)	Adjusts the R, G, B master gamma correction curve.
		FLARE	$\boxed{\text{ON}}$, OFF	Turns the flare correction circuit on and off.
		TEST	1, 2, $\boxed{\text{OFF}}$	Selects the test signal. 1 : Outputs the sawtooth waveform test signal 2 : Outputs 3-step waveform test signal OFF : No test signal is output
		CLEAR	Press MENU SEL switch to execute.	Sets all settings on the VIDEO LEVEL page to 0. (When you press MENU SEL switch, the "CLEAR" indication flashes. Press MENU SEL switch again to execute; press CANCEL button to cancel.)
DETAIL1		DETAIL	$\boxed{\text{ON}}$, OFF	Turns the function on and off to improve resolution by adding the detail signal.
		LEVEL	–99 to 99 ($\boxed{0}$)	Adjusts the master level for the detail signal.
		LIMITTER	–99 to 99 ($\boxed{0}$)	Adjusts the clipping level against the maximum detail level.
		CRISPENING	–99 to 99 ($\boxed{0}$)	Adjusts the level at which the detail signal is crispened.
		LEVEL DEP	–99 to 99 ($\boxed{0}$)	Adjusts the level to control the detail signal used at lower signal level.
		LEVEL DEP	$\boxed{\text{ON}}$, OFF	Turns the level depend function on and off.
		TEST	1, 2, $\boxed{\text{OFF}}$	Selects the test signal. 1 : Outputs the sawtooth waveform test signal 2 : Outputs 3-step waveform test signal OFF : No test signal is output
		CLEAR	Press MENU SEL switch to execute.	Sets all settings on the DETAIL 1 page to 0. (When you press MENU SEL switch, the "CLEAR" indication flashes. Press MENU SEL switch again to execute; press CANCEL button to cancel.)
DETAIL2		DETAIL	$\boxed{\text{ON}}$, OFF	Turns the function on and off to improve resolution by adding detail signal.
		H/V RATIO	–99 to 99 ($\boxed{0}$)	Adjusts the mix ratio of H and V detail signal.
		FREQUENCY	–99 to 99 ($\boxed{0}$)	Adjusts the boost frequency for H detail signal.
		MIX RATIO	–99 to 99 ($\boxed{0}$)	Adjusts the mix ratio of H detail signal used before and after the gamma compensation circuit.
		W.LIMITTER	–99 to 99 ($\boxed{0}$)	Adjust the clipping level adainst the higher detail signal at the maximum level.
		B.LIMITTER	–99 to 99 ($\boxed{0}$)	Adjusts the clippping level against the lower detail signal at the minimum level.
		COMB	–99 to 99 ($\boxed{0}$)	Sets the effect volume of the comb filter 99 (Causes less cross colors.) ↔ –99 (Yields clear pictures, but causes more cross colors.) * For a PAL model, this function has the effect on not every object but a specified object.
		KNEE APRT.	ON, $\boxed{\text{OFF}}$	Turns the knee aperture function on and off.
		TEST	1, 2, $\boxed{\text{OFF}}$	Selects the test signal. 1 : Outputs the sawtooth waveform test signal 2 : Outputs 3-step waveform test signal OFF : No test signal is output
		CLEAR	Press MENU SEL switch to execute.	Sets all settings on the DETAIL2 page to 0. (When you press MENU SEL switch, the "CLEAR" indication flashes. Press MENU SEL switch again to execute; press CANCEL button to cancel.)

Page	Ver.	Item	Settings	Contents
SKIN DETAIL		SKIN DETAIL	ON, $\boxed{\text{OFF}}$	Turns the skin detail function on and off.
		LEVEL	–99 to 99 ($\boxed{0}$)	Adjusts the level of the skin detail.
		PHASE	100° to 170°($\boxed{120}$)	Adjusts the hue for the skin detail function.
		WIDTH	0° to 90° ($\boxed{60}$)	Adjusts the color width for the skin detail function.
		SATURATION	–99 to 99 ($\boxed{0}$)	Adjusts the color saturation of the skin detail function.
		GATE	ON, $\boxed{\text{OFF}}$	Turns the area display of the skin detail function in the viewfinder screen.
	1.10	AUTO HUE	Press MENU SEL switch to execute.	Sets the range of skin detail hue function automatically. (Locate the desired skin color within the gate marker of VF and measure.)
		CLEAR	Press MENU SEL switch to execute.	Sets all settings on the SKIN DETAIL page to 0. (When you press MENU SEL switch, the "CLEAR" indication flashes. Press MENU SEL switch again to execute; press CANCEL button to cancel.)
GAMMA		GAMMA, R/G/B/M	–99 to 99 ($\boxed{0}$)	Adjusts the R, G, B and master gamma level.
		COARSE	0.40, $\boxed{0.45}$, 0.50	Selects the gamma value in steps.
		GAMMA	$\boxed{\text{ON}}$, OFF	Turns the gamma value on and off.
	1.07	BLACK GAMMA	–99 to 99 ($\boxed{0}$)	Adjusts the black gamma (master). e)
	1.07	BLACK GAMMA	ON, $\boxed{\text{OFF}}$	Turns the black gamma function on and off. e)
		TEST	1, 2, $\boxed{\text{OFF}}$	Selects the test signal. 1 : Outputs the sawtooth waveform test signal 2 : Outputs 3-step waveform test signal OFF : No test signal is output
		CLEAR	Press MENU SEL switch to execute.	Resets all settings on the GAMMA page to the factry settings. (When you press MENU SEL switch, the "CLEAR" indication flashes. Press MENU SEL switch again to execute; press CANCEL button to cancel.)
KNEE/W.CLIP		POINT	–99 to 99 ($\boxed{0}$)	Adjusts the knee point level when the function is OFF.
		SLOPE	–99 to 99 ($\boxed{0}$)	Adjusts the knee slope level when the function is OFF.
		KNEE	$\boxed{\text{ON}}$, OFF	Turns the knee function on and off.
		AUTO KNEE	ON, $\boxed{\text{OFF}}$	Turns the auto knee function on and off.
		KNEE MAX	ON, $\boxed{\text{OFF}}$	Turns on and off the knee max function which changes the slope to completely collapsed form.
		WHITE CLIP	–99 to 99 ($\boxed{0}$)	Adjusts the white clip level.
		WHITE CLIP	$\boxed{\text{ON}}$,OFF	Turn the white clip function on and off.
		TEST	1, 2, $\boxed{\text{OFF}}$	Selects the test signal. 1 : Outputs the sawtooth waveform test signal 2 : Outputs 3-step waveform test signal OFF : No test signal is output
		CLEAR	Press MENU SEL switch to execute.	Sets all settings on the KNEE/W.CLIP page to 0. (When you press MENU SEL switch, the "CLEAR" indication flashes. Press MENU SEL switch again to execute; press CANCEL button to cancel.)

e) This function is inhibited while TALLY lamps are lit or by the setting of the System Config menu.
A noise appears on the screen during operation.

Page	Ver.	Item	Settings	Contents
MATRIX		G-R, B-R	–99 to 99 ($\boxed{0}$)	Compensates the user's matrix (sets an optional value as the constant for G-R, B-R, R-G, B-G, R-B, and G-B).
		R-G, B-G	–99 to 99 ($\boxed{0}$)	
		R-B, G-B	–99 to 99 ($\boxed{0}$)	
		MATRIX	$\boxed{\text{ON}}$, OFF	Turns the matrix compensation on and off.
		USER [f]	$\boxed{\text{ON}}$, OFF	Turns the user's matrix compensation on and off.
		PRESET [f]	$\boxed{\text{ON}}$, OFF	Turns on and off only the preset matrix compensation (fixed constant compensation).
		TEST	1, 2, $\boxed{\text{OFF}}$	Selects the test signal. 1 : Outputs the sawtooth waveform test signal 2 : Outputs 3-step form test signal OFF : No test signal is output
		CLEAR	Press MENU SEL switch to execute.	Sets all settings on the MATRIX page to 0. (When you press MENU SEL switch, the "CLEAR" indication flashes. Press MENU SEL switch again to execute; press CANCEL button to cancel.)
SCENE FILE		1		Storing and recalling a scene file (painting data corresponding to a shot scene) **Storing a scene file** 1 Turn MENU SEL switch to move the → cursor to "FILE STORE," then press MENU SEL switch. "FILE STORE" flashes on the viewfinder screen. 2 Select the file number (1 to 5) to be stored to. (If data is already stored at the selected location, the new data replaces the current data.) **Recalling a scene file** Turn MENU SEL switch to move the → cursor to the file number whose data is to be recalled, then press MENU SEL switch. • When MENU SEL switch is pressed, the scene file data replaces the current settings. • When the scene file is recalled, an asterisk appears next to the number.
		2		
		3		
		4		
		5		
		FILE STORE		
		STANDARD		Returns the current amount of paint adjustments and switch setting to their reference value stored as a reference file.
SHUTTER * ROM version Ver. 1.12 or higher	1.12	SHUTTER	ON, $\boxed{\text{OFF}}$	Turns the shutter on and off. [u]
	1.10	SHUTTER	$\frac{1}{100}$ (or $\frac{1}{60}$), $\frac{1}{125}$, $\frac{1}{250}$, $\frac{1}{500}$, $\frac{1}{1000}$, $\frac{1}{2000}$	Selects the shutter speed.
	1.12	ECS	ON, $\boxed{\text{OFF}}$	Turns the ECS mode on and off. [u]
	1.10	ECS	[h]	Sets the ECS (CLS) frequency.
	1.12	S-EVS	ON, $\boxed{\text{OFF}}$	Turns the S-EVS mode on and off. [u]
	1.10	S-EVS	$\boxed{0}$ to 100%	Sets the desired resolution in %. (This setting is invalid with the OHB-450/450P/451/451P installed.)
SHUTTER * ROM version up to Ver. 1.11	1.10	SELECT	$\boxed{\text{OFF}}$, SHUTTER, EVS, ECS	Selects the shutter, EVS, or ECS mode.
	1.10	SHUTTER	$\frac{1}{100}$ (or $\frac{1}{60}$), $\frac{1}{125}$, $\frac{1}{250}$, $\frac{1}{500}$, $\frac{1}{1000}$, $\frac{1}{2000}$	Selects the shutter speed.
	1.10	ECS	[h]	Sets the ECS (CLS) frequency.
	1.10	S-EVS	$\boxed{0}$ to 100%	Sets the desired resolution in %. (This setting is invalid with the OHB-450/450P/451/451P installed.)
OTHERS	1.09	16:9/4:3 MODE	$\boxed{16:9}$, 4:3	Selects the aspect ratio for the video signal output. [i]

f) When the USER and PRESET are both set to ON, the matrix constant compensation is total value of the USER and PRESET matrix.

h) Variable range differs depending on the OHB in use. For details refer to the operation manual supplied with the OHB.

i) The aspect ratio normally corresponds to the CCU's setting when the CCU is connected. To forcibly select, use this menu.

u) If the shutter mode selection is made both by the SHUTTER switch in the camera front and from the setup menu, last-set item is selected.
If the SHUTTER and ECS are both set to ON in the menu, the ECS mode is automatically selected. And if the ECS and S-EVS are both set to ON, the S-EVS mode is.

3-1-3. Maintenance Menu

The Maintenance menu is used for encoder output level and other adjustments items necessary for camera's maintenance. The Maintenance menu is not normally accessible. To display this menu, switch setting of the AT-95 board is required.
For details, refer to Section 1-3. "Function of Internal Switches—AT-95 board".
To activate the Maintenance menu, first display the TOP menu.

(Boxed items under "Settings" indicate the factory setting.)

Page	Ver.	Item	Settings	Contents
VBS		SYNC LEVEL	-99 to 99 ($\boxed{XX}$)	Adjusts the sync level of camera's encoder output signal.
		Y LEVEL	-99 to 99 ($\boxed{XX}$)	Adjusts the Y level of camera's encoder output signal.
		BURST LEVEL	-99 to 99 ($\boxed{XX}$)	Adjusts the burst level of camera's encoder output signal.
		CHROMA LEVEL	-99 to 99 ($\boxed{XX}$)	Adjusts the chroma level of camera's encoder output signal.
		Q/V LEVEL	-99 to 99 ($\boxed{XX}$)	Adjusts the Q (or V) level of camera's encoder output signal.
		SET UP	-99 to 99 ($\boxed{XX}$)	Adjusts the sync level of camera's encoder output signal. (This setting is valid only for NTSC.)
		BF PHASE	-99 to 99 ($\boxed{XX}$)	Adjusts the burst phase of camera's encoder output signal.
		SC-H PHASE	-99 to 99 ($\boxed{XX}$)	Adjusts the SC-H phase of camera's encoder output signal.
		V BLANKING	19,$\boxed{20}$,21H	Adjusts the V blanking width of camera's encoder output signal. (This setting is valid only for NTSC.) In connection with CCU, the width is fixed to 19H. * For a PAL model, the width is fixed to 25H at all times.
WHITE SHADING		V SAW R/G/B	-99 to 99 ($\boxed{XX}$)	Adjusts the volume of V.SAW compensation for the R, G, or B white shading.
		V PARA R/G/B	-99 to 99 ($\boxed{XX}$)	Adjusts the volume of V.PARA compensation for the R, G, or B white shading.
		H SAW R/G/B	-99 to 99 ($\boxed{XX}$)	Adjusts the volume of H.SAW compensation for the R, G, or B white shading.
		H PARA R/G/B	-99 to 99 ($\boxed{XX}$)	Adjusts the volume of H.PARA compensation for the R, G, or B white shading.
		WHITE R/G/B	-99 to 99 ($\boxed{XX}$)	Adjusts the R, G, or B white level.
		V MOD R/G/B/M	-99 to 99 ($\boxed{XX}$)	Adjusts the volume of V.SAW compensation for the R, G, B or master modulation shading of the lens and prism. i)
		V MOD	ON, $\boxed{OFF}$	Turns the V modulation shading on and off.
		AUTO WHITE	Press MENU SEL switch to execute.	Starts to automatically adjust the white balance.
		CLEAR	Press MENU SEL switch to execute.	Resets numeric settings to "0" on the WHITE SHADING page. (When you press the MENU SEL switch, the "CLEAR" indication flashes. Press the MENU SEL switch again to execute; press CANCEL button to cancel.)
BLACK SHADING		V SAW R/G/B	-99 to 99 ($\boxed{XX}$)	Adjusts the volume of V.SAW compensation for the R, G, or B black shading.
		H SAW R/G/B	-99 to 99 ($\boxed{XX}$)	Adjusts the volume of H.SAW compensation for the R, G, or B black shading.
		BLK SET R/G/B	-99 to 99 ($\boxed{XX}$)	Adjusts the volume of BLACK SET compensation for the R, G, or B. (Adjusts for each gain.)
		BLACK R/G/B/M	-99 to 99 ($\boxed{XX}$)	Adjusts the R, G, B or master black level.
		MASTER GAIN	-3,0,3,6,9,12,18, 24,30 dB ($\boxed{X}$)	Selects the master gain value.
		AUTO BLACK	Press MENU SEL switch to execute.	Starts to automatically adjust the black balance.
		CLEAR	Press MENU SEL switch to execute.	Resets numeric settings to "0" on the BLACK SHADING page. (When you press the MENU SEL switch, the "CLEAR" indication flashes. Press the MENU SEL switch again to execute; press CANCEL button to cancel.)

i) When the master modulation shading is adjusted, the V. SAW component for the R and B V-modulation shadings of the prism is simultaneously compensated.

Page	Ver.	Item	Settings	Contents
AUTO SET UP		AUTO WHITE	Press MENU SEL switch to execute.	Starts to automatically adjust the white balance.
		AUTO BLACK	Press MENU SEL switch to execute.	Starts to automatically adjust the black balance. (To abort a processing during execution, press MENU SEL switch.)
		LEVEL AUTO	Press MENU SEL switch to execute.	Starts to automatically adjust the level in the internal circuits. c) (To abort a processing during execution, press MENU SEL switch.)
	1.10	AUTO HUE	Press MENU SEL switch to execute.	Sets the skin detail hue function automatically. (Locate the desired skin color within the gate marker of VF and measure.)
		WHITE SHADING	Press MENU SEL switch to execute.	Starts to automatically adjust the white shading. (To abort a processing during execution, press MENU SEL switch.)
		BLACK SHADING	Press MENU SEL switch to execute.	Starts to automatically adjust the black shading. k) (To abort a processing during execution, press MENU SEL switch.)
	1.10	COLOR REF (SELF)	Press MENU SEL switch to execute.	Makes a color reference to compensate the difference in colors between OHBs using a single camera. (Locate the desired colors of a Macbeth chart within the gate marker of VF and measure. To abort a processing during execution, press MENU SEL switch.) m)
	1.10	COLOR SETUP (SELF)	Press MENU SEL switch to execute.	Automatically calculates the color matrix from the reference. (Locate the desired colors of a Macbeth chart within the gate marker of VF and measure. To abort a processing during execution, press MENU SEL switch.) n)
DATE/TIME		DD/MM/YY HH:MM:SS		Adjusts a built-in timer. (HH;hour/MM;minute only)
		DATE ON BARS	ON, $\boxed{\text{OFF}}$	Selects whether the date characters are mixed with a camera output signal in the color-bar mode, or not. (This setting is valid only when the DISP switch is set to on or off.)
		TIME ON BARS	ON, $\boxed{\text{OFF}}$	Selects whether the time characters are mixed with a camera output signal in the color-bar mode, or not. (This setting is valid only when the DISP switch is set to on or off.)
OTHERS		S/N MEASURE	ON, $\boxed{\text{OFF}}$	ON : Set to ON in mesuring the S/N ratio. And settings of the DETAIL, CHROMA, GAMMA, MATRIX, and FLARE will be temporarily turned OFF. OFF : Settings of DETAIL and so on are returned as they were.
		MOD MEASURE	ON, $\boxed{\text{OFF}}$	ON : Set to ON in mesuring the modulation depth. And settings of the DETAIL, GAMMA, MATRIX, and FLARE will be temporarily turned OFF. OFF : Settings of DETAIL and so on are returned as they were.
		MASTER BLACK	-99 to 99 ($\boxed{0}$)	Adjusts the master black in measuring the S/N ratio and modulation depth.
		DETAIL CHROMA GAMMA MATRIX FLARE	$\boxed{\text{ON}}$, OFF $\boxed{\text{ON}}$, OFF $\boxed{\text{ON}}$, OFF $\boxed{\text{ON}}$, OFF $\boxed{\text{ON}}$, OFF	

c) When executing the LEVEL AUTO, data set through the menu is all cleared and the automatic level adjustment is performed in sequence, After the adjustment is complete, adjustment result is stored as a master setup data.

1. A reference file which is reference for adjustment is loaded .
2. Lens is autmatically closed and the black balance is automatically adjusted.
3. The white balance is automatically adjust using TEST 2 (3-step) signal.

Notes

This white balance adjustment compensates a drift of the gain of an amplifier, does not compensate color temperature for an actual object.

The gamma and knee compensation values do not change with a lapse of time because of the digital-processing camera. Therefore, the gamma and knee compensation values remains the values stored in the reference file.

k) Before first using the camera with the OHB-450/451/550/550WS (or their PAL version) installed, or After replacing the CCD unit, be sure to execute the automatic black shading adjustment.

m) When performing compensation between two or more cameras, use the MSU.

n) Differing from the color-setup operation by plural cameras, a data transfer is not performed.
Execute to recalculate. After execution, the color matrix data is temporarily reflected in the OHB matrix of the System Config menu.
Execute the OHB FILE STORE of the Triming menu to store the color matrix data.

3-1-4. Reference Menu

The Reference menu stores the reference values used for automatic setup adjustment and the standard settings of the switches as the reference files. And the menu can clear the current reference files. The Reference menu is not normally accessible. To display this menu, switch setting of the AT-95 board is required. For details, refer to Section 1-3. "Function of Internal Switches—AT-95 board". To activate the Reference menu, first display the TOP menu.

Notes

1. Executing the FILE STORE on the REFERENCE FILE page registers settings of items, which have been set through the Paint, Maintenance and System config menus just before the file store, as the reference values.
2. When changed numbers of items are returned to the reference values stored as the reference files, recall the standard file using an MSU/RCP or the setup menu.

Page	Ver.	Item	Settings	Contents
REFERENCE FILE		FILE STORE	Press MENU SEL switch to execute.	Stores the adjustment value on each item as the reference value.
		CLEAR FILE	Press MENU SEL switch to execute.	Clears the adjustment values stored as the reference files. (Temporarily clears the current reference files [p].)

p) If the power is turned off without execution of the FILE STORE after clearing the file, the original setting is restored.

3-1-5. Triming Menu

The Triming menu stores the adjustment data in replacing parts as the triming files. And the menu can clear the current adjustment values. The Triming menu is not normally accessible. To display this menu, switch setting of the AT-95 board is required. For details, refer to Section 1-3. "Function of Internal Switches—AT-95 board". To activate the Triming menu, first display the TOP menu.

Note

Executing the FILE STORE on the TRIMING FILE page registers settings of items, which have been set through the Maintenance and System config menus just before the file store, as the reference values.

Page	Ver.	Item	Settings	Contents
TRIMING FILE		FILE STORE	Press MENU SEL switch to execute.	Stores the adjustment value on each item as the reference value.
		CLEAR FILE	Press MENU SEL switch to execute.	Clears the adjustment values stored as the triming files. (Temporarily clears the current triming files [p].)
OHB FILE		FILE STORE	Press MENU SEL switch to execute.	Stores specific data for a CCD unit to be used as the OHB files. The standard values are stored at the factory. (Stores the offset value, OHB matrix data and so on.)
LENS FILE	1.10	LENS FILE STORE	Press MENU SEL switch to execute.	Stores specific data for a lens to be used as the lens files. The standard values are stored at the factory.
	1.10	SELECT CURRENT LENS	$\boxed{0}$ to 49	Loads a lens data into the lens file selected at present by the LENS FILE page of the Operation menu.
	1.10	RESET ALL LENS	Press MENU SEL switch to execute.	Resets all of 16 lens files. (Example) No. : 1 ← Lens stored number (0 to 49) Lens : 27 : A14x8BERM ← Lens name EX : 1.0 ← Lens extender value

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p) If the power is turned off without execution of the FILE STORE after clearing the file, the original setting is restored.

3-1-6. System Config Menu

The System config menu is used for adjustments items necessary to replace a printed circuit board or some parts of the camera. The System config menu is not normally accessible. To display this menu, switch setting of the AT-95 board is required. For details, refer to Section 1-3. "Function of Internal Switches—AT-95 board". To activate the System config menu, first display the TOP menu.

(Boxed items under "Settings" indicate the factory setting. XX or XXX represents two or three digits in hexadecimal.)

Page	Ver.	Item	Settings	Contents
DATE/TIME		YY/MM/DD HH:MM:SS		Adjusts the built-in calender and timer.
		RESET	Turn MENU SEL switch to execute.	Resets hour (HH), minute (MM) and second (SS) of the timer.
Y/CHROMA		SC FREQ	XXX ($\boxed{XX}$)	Adjusts the camera's subcarrier frequency.
		Y SYNC	XXX ($\boxed{XX}$)	Adjusts the sync level of camera's Y output signal.
		Y SETUP	XXX ($\boxed{XX}$)	Adjusts the setup level of camera's Y output signal.
		Y VIDEO	XXX ($\boxed{XX}$)	Adjusts the Y level of camera's Y output signal.
		TEST SETUP	XXX ($\boxed{XX}$)	Adjusts the setup level of camera's encoder output signal.
		BURST LVL	XXX ($\boxed{XX}$)	Adjusts the burst level of camera's encoder output signal.
		CHROMA LVL	XXX ($\boxed{XX}$)	Adjusts the chroma level of camera's encoder output signal.
		Q/V LEVEL	XXX ($\boxed{XX}$)	Adjusts the Q(V) level of camera's encoder output signal.
		SC-H PHASE	XXX ($\boxed{XX}$)	Adjusts the SC-H phase of camera's encoder output signal.
		REG LVL	XXX ($\boxed{XX}$)	Adjusts the level of the R, G and B output signals.
		CB	ON, $\boxed{OFF}$	Turns on and off the camera color-bar signal to be output in setting each item on the Y/CHROMA page.
PR/VA/TEST		PR ADG R/G/B	XXX ($\boxed{XX}$)	Adjusts the reference level of the AD converter for R/G/B signals on the PR board.
		VA MOD R/G/B	XXX ($\boxed{XX}$)	Adjusts the R, G or B modulation balance for the VA board.
		G CLOCK	XXX ($\boxed{XX}$)	Adjusts the clock pulse in phase to be input to the AD converter for G signal on the PR board. (Note: In replacing OHB, readjustment is required to set the maximum value of the modulation depth.)
		R/B CLOCK	XXX ($\boxed{XX}$)	Adjusts the clock pulse in phase to be input to the AD converter for R/B signals on the PR board. (Note: In replacing OHB, readjustment is required to set the minimum level of a pseudo signal.)
		M.BLACK	XXX ($\boxed{XX}$)	Adjusts the master black signal.
		TEST2 HI	XXX ($\boxed{XX}$)	Adjusts the high level of the TEST2 (3-STEP) signal on the VA board.
		TEST2 MID	XXX ($\boxed{XX}$)	Adjusts the middle level of the TEST2 (3-STEP) signal on the VA board.
		TEST CLIP	XXX ($\boxed{XX}$)	Adjusts the clip level of the TEST1 (sawtooth) signal on the VA board.
		TEST	1, 2, $\boxed{OFF}$	Selects a TEST signal to be output in setting each item on the PR/VR/TEST page. 1 : Outputs the sawtooth test signal 2 : Outputs the 3-step waveform test signal OFF : No test signal is output
PRE KNEE/ZEBRA		PREKNEE1 R/G/B	XXX ($\boxed{XX}$)	Adjusts the R, G or B pre-knee 1 level on the VA board.
		PREKNEE2 R/G/B	XXX ($\boxed{XX}$)	Adjusts the R, G or B pre-knee 2 level on the VA board.
(Continued)		APERTURE	XXX ($\boxed{XX}$)	Adjusts the aperture compensation signal level.

Page	Ver.	Item	Settings	Contents
PRE KNEE/ ZEBRA		WHITE CLIP	XXX ($\boxed{XX}$)	Adjusts the white clip level.
		WHITE CLIP	$\boxed{ON}$, OFF	Turns the white clip function on and off.
		ZEBRA1 LEVEL, RANGE	XXX ($\boxed{XX}$)	Sets the center value and range for the zebra 1 signal detection.
		ZEBRA2 LEVEL	XXX ($\boxed{XX}$)	Sets the detection value for the zebra 2 signal.
		Z.DISP	1,2, $\boxed{1\&2}$	Selects a zebra signal to be displayed on the viewfinder. 1 : Zebra 1 signal 2 : Zebra 2 signal 1&2 : Both zebra 1 and 2 signals are displayed at the same time.
		TEST	1, 2, $\boxed{OFF}$	Selects a TEST signal to be output in setting each item on the PREKNEE/ZEBRA page. 1 : Outputs the sawtooth test signal 2 : Outputs the 3-step waveform test signal OFF : No test signal is output
VTR/CCU		VTR R-Y	XXX ($\boxed{XX}$)	Adjusts the R-Y color-difference signal level.
		VTR B-Y	XXX ($\boxed{XX}$)	Adjusts the B-Y color-difference signal level.
		CCU Y SAMP	XXX ($\boxed{XX}$)	Adjusts the level of the sample pulse to be mixed with the Y signal.
		CCU R-Y SYNC	XXX ($\boxed{XX}$)	Adjusts the level of the sync pulse to be mixed with the R-Y signal.
		CCU B-Y SAMP	XXX ($\boxed{XX}$)	Adjusts the level of the sample pulse to be mixed with the B-Y signal.
		RGB OFFSET	XXX ($\boxed{XX}$)	Adjusts the G signal level.
		TEST	1, 2, $\boxed{OFF}$	Selects a TEST signal to be output in setting each item on the VTR/CCU page. 1 : Outputs the sawtooth test signal 2 : Outputs the 3-step waveform test signal OFF : No test signal is output
		CB	ON, $\boxed{OFF}$	Turns on and off the camera color-bar signal to be output in setting each item on the VTR/CCU page.
IRIS		LEVEL	XXX ($\boxed{XX}$)	Adjusts the auto-iris level.
		APL RATIO	XXX ($\boxed{XX}$)	Sets the way the iris is automatically adjusted. -99 (PEAK) ↔ 99 (AVERAGE)
COLOR SETUP	1.10	COLOR REF (SELF)	Press MENU SEL switch to execute.	Makes a color reference to compensate the difference in colors between OHBs using a single camera. (Locate the desired colors of a Macbeth chart within the gate marker of VF and measure. To abort a processing during execution, press MENU SEL switch.) [m]
	1.10	COLOR SETUP (SELF)	Press MENU SEL switch to execute.	Automatically calculates the color matrix from the reference. (Locate the desired colors of a Macbeth chart within the gate marker of VF and measure. To abort a processing during execution, press MENU SEL switch.) [n]
	1.10	(OHB MATRIX) G-R, B-R R-G, B-G R-B, G-B	 -99 to 99 ($\boxed{0}$) -99 to 99 ($\boxed{0}$) -99 to 99 ($\boxed{0}$)	Compensates the OHB matrix to adjust the difference between OHBs or cameras (sets an optional value as the constant for G-R, B-R, R-G, B-G, R-B and G-B). [r]
	1.10	OHB MTX	$\boxed{ON}$, OFF	Turns the OHB matrix compensation on and off.
	1.10	CM ADD LVL	$\boxed{0}$ to 16	For fine adjustment in color-setup operation. Compensates the caluculation value for the color selected by the CM ADD COLOR in 16 steps and recalculates the OHB matrix. (Selecting 0 turns off the function.) [s] [t]
	1.10	CM ADD COLOR	$\boxed{0}$ to 17	For fine adjustment in color-setup operation. Select a color to be compensated from 18 colors of the Macbeth chart with the gate marker of VF. Recalculates the OHB matrix [t]

m) When performing compensation between two or more cameras, use the MSU.

n) Differing from the color-setup operation by plural cameras, a data transfer is not performed.
Execute to recalculate. After execution, the color matrix data is temporarily reflected in the OHB matrix of the System Config menu.
Execute the OHB FILE STORE of the Triming menu to store the color matrix data.

r) Adjust with the MATRIX of the Paint menu turned OFF. Execute the OHB FILE STORE to store the adjustment values.

s) The compensation value is temporarily reflected in the OHB matrix of the System Config menu after execution of the COLOR SETUP(SELF). Execute the OHB FILE STORE of the Triming menu to store the value.
The higher you set the value of the CM ADD LVL, the more the weights are assigned to the color selected by the CM ADD COLOR.
The compensation is performed so as to entirely minimize the error, while reducing the error for the weights-assigned color.

t) After powered off once following the completion of color-setup operation, recalculation is not performed.

Page	Ver.	Item	Settings	Contents
OTHERS 1		FILTER, WHT MEM	$\boxed{\text{ON}}$, OFF	ON : A total of 8 settings of the white balance value can be saved in conbination with the CC filter and WHITE BAL switch settings. OFF : One white balance value can be saved for the WHITE BAL switch setting A or B, for a total of 2 settings.
		NTSC ENC	$\boxed{\text{WIDE}}$, NRW	Sets the band width of the Q signal for the NTSC color encoder.
		ROTARY	$\boxed{\text{STD}}$, RVS	Selects the mode of MENU SEL switch (as turned counterclockwise when viewed from the front.) STD : Cursor moves downwards and a numeric value increases. RVS : Cursor moves upwards and a numeric value decreases.
		OWN CALL	R, $\boxed{\text{F\&R}}$, OFF	Selects whether one or two TALLY lamps are lit corresponding to the CALL button of camera adaptor pressed, or not. Or selects which TALLY lamp is lit when the CALL button is pressed. (This setting is valid in connection with CCU. When the camera is used alone and MSU/RCP is not connected to the camera, it is always set to OFF.) R : Rear TALLY lamp is lit. F&R : Rear and front TALLY lamps are lit. OFF : No TALLY lamp is lit corresponding to the CALL button.
		CENTER H POS	–20 to 20 ($\boxed{\text{XX}}$)	Shifts horizontally the location of the center marker on the screen. 20 (right) ↔ –20 (left)
		CENTER V POS	–20 to 20 ($\boxed{\text{XX}}$)	Shifts vertically the location of the center marker on the screen. 20 (up) ↔ –20 (down)
		LENS VTR S/S	TALK, $\boxed{\text{RET2}}$	Selects the mode of VTR S/S SW of the lens and camera. TALK : VTR S/S SW of lens functions as INCOM TALK SW (momentary) and that of the camra as RET2 SW. RET2 : VTR S/S SW of lens functions as RET2 SW and that of the camera as INCOM TALK SW.
		VF ? DISPLAY	$\boxed{\text{ON}}$, OFF	Turns on and off the indication of ? mark at the top-right of the VF with the DISP switch set to ON when the self-diagnosis result is NG (no good) and so on.
		PinP RET RVS	$\boxed{\text{RVS1}}$, RVS 2, OFF	Selects the indication mode of VF display in PinP mode. (Does not function in the unit.)
OTHERS 2		F TALLY RVS	$\boxed{\text{ON}}$, OFF	Selects the operation mode of TALLY lamps corresponding to a CALL button of MSU or RCP pressed when a TALLY signal is input to the camera from CCU or VTR. ON : Rear and front TALLY lamps go out. OFF : Rear TALLY lamp alone goes out.
	1.07	BLK GAM INHIBIT	$\boxed{\text{ON}}$, OFF	ON : Inhibits the black gamma adjustment and on/off function from the MSU or Paint manu. OFF : Enables the above operation.
	1.10	CHAR CAM No.	$\boxed{\text{1,2,3}}$, A,B,C	Selects the indication mode of the camera number set by the CAMERA No. page of Operation menu. 1,2,3 : Indicates in numerics. A,B,C : Indicates camera numbers 1 to 27 in alphabetical order of A to Z. (When connecting 28 or more cameras, select "1,2,3".)
	1.10	WHT SETUP MODE	$\boxed{\text{AWB}}$, LEVEL	AWB : After executing the LEVEL AUTO, white balance adjustment data returns to the value before execution. LEVEL: After executing the LEVEL AUTO, white balance adjustment data changes to the value after the white balance is adjusted using TEST 2 signal.
(Continued)	1.10	AW SHADING MODE	$\boxed{\text{RGB}}$, RB ONLY	RGB : When automatically adjusting the white balance, R, G, and B signal waveforms are all flattened. RB ONLY : When automatically adjusting the white balance, R and B signal waveforms are flattened.

Page	Ver.	Item	Settings	Contents
OTHERS 2	1.13	TALK PRIORITY	$\boxed{\text{TALK1}}$, TALK2	Selects the channel for which the VTR S/S switch of the lens turns on/off the intercom microphone when the optional 2-channel intercom function of the CA-550/550P is effective and both channel 1 and 2 are in remote mode.
	1.10	CANON U-4 MODE	ON, $\boxed{\text{OFF}}$	Nomally OFF. Set to ON only when using the BVP-550 in the Canon-made U-4 system.
	2.01	W GAIN	ON, $\boxed{\text{OFF}}$	(Does not function in the unit.)

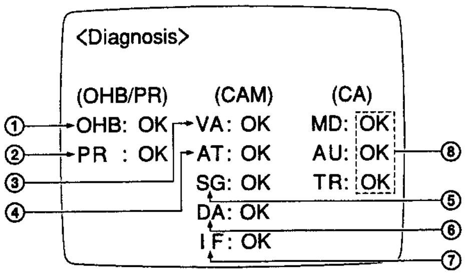
3-2. Self-Diagnosis

The BVP-550 has a diagnosis mode used for self-diagnosis of every plug-in board and the OHB.
The diagnosis page is displayed on the viewfinder screen.

- Operation

  Select "Diagnosis" page of the Operation menu referring to Section 3-1.

- Viewfinder Screen



```
<Diagnosis>

(OHB/PR)     (CAM)      (CA)
OHB: OK      VA: OK     MD: OK
PR  : OK     AT: OK     AU: OK
             SG: OK     TR: OK
             DA: OK
             I F: OK
```

- Display Descriptions

Marks	Board/Block	Judging Point for NG
①	OHB(CCD UNIT)	Error in communication with IC18, IC19/TG-159
②	PR-211	Error in communication with IC49
③	VA-163	Error in communication with IC26
④	AT-95	Error in communication with IC46
⑤	SG-234	Error in communication with IC21
⑥	DA-88	Error in communication with IC10
⑦	IF-510	Error in communication with IC155

Refer to CA-550/550P maintenance manual for descriptions on columns of CA.

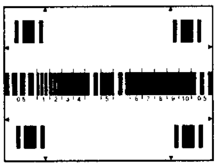
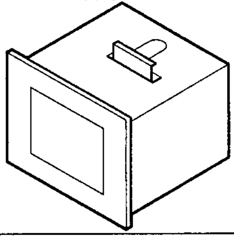
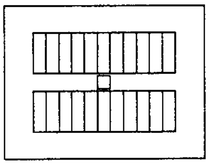
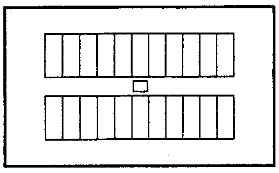
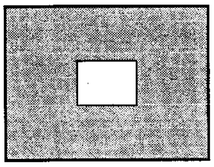
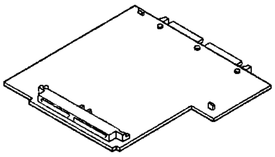
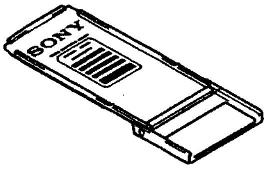
Note

When other equipment than the CA-550/550P is connected to the camera, or when the CA-550/550P is connected to the camera but is not connected to the CCU, the columns ⑧ will display "– –".

Section 4
Electrical Alignment

4-1. Preparation

4-1-1. Equipment Required

Multiburst Chart	**Pattern box PTB-500**
Sony P/N: J-6026-110-A 	**Sony P/N: J-6029-140-B** • Light source for test chart Power supply AC90 to 240V 
Grayscale Chart	**Grayscale Chart (16:9)**
Sony P/N: J-6026-130-B 	**Sony P/N: J-6394-080-A** 
White Window Chart	**Extension board EX-464 (option)**
Make a square hole at the center of a black sheet of paper. 	**Sony P/N: J-6395-040-A** For BVP-550 plug-in boards 
Extension board BKP-7900 (option)	
For CCU-700/700P plug-in boards 	

Measuring Equipment

- Frequency counter
  Advantest TR5821AK or equivalent
- Oscilloscope
  Tektronix 2465 or equivalent
- Waveform monitor/Vectorscope
  Tektronix 1750 or equivalent (for NTSC)
  Tektronix 1751 or equivalent (for PAL)
- Digital voltmeter
  Advantest TR6845 or equivalent
- Video signal generator
  Tektronix 1410 or equivalent (for NTSC)
  Tektronix 1411 or equivalent (for PAL)
- Color monitor
  Sony BVM-1911/2811 or equivalent (for NTSC)
  Sony BVM-2011P/3011P or equivalent (for PAL)

Peripheral Equipment

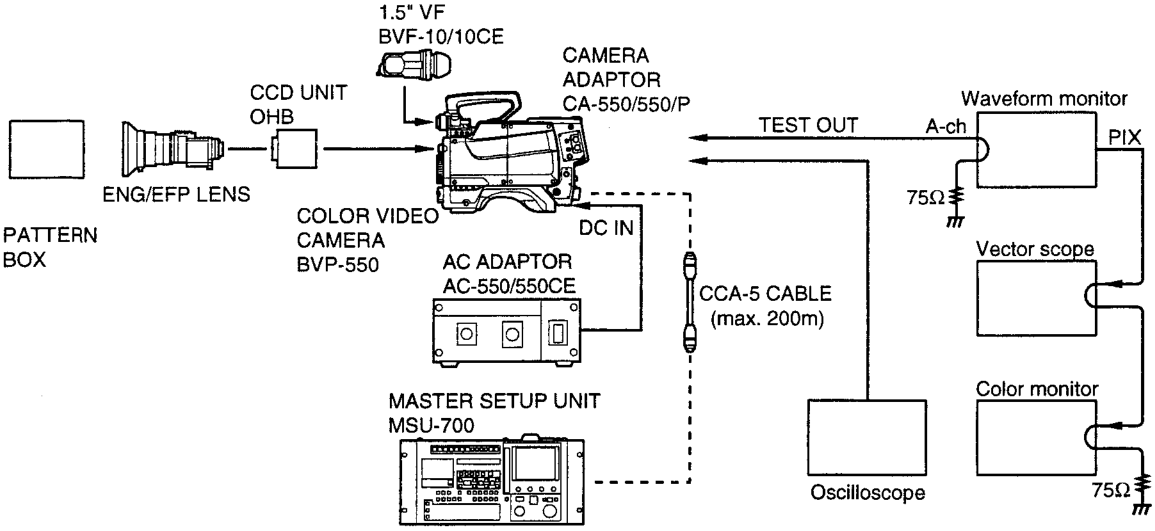
- CCD unit OHB-450/550 series
- Camera adaptor CA-550/550P
- AC adaptor AC-550/550CE
- Master setup unit MSU-700

4-1-2. Notes on Adjustment

When performing the adjustment, read throughly the following comments.

1. The calibration of all measuring equipment should be completed.
2. The alignment of OHB-450/550 series, CA-550/550P and MSU-700 should be also completed.
3. "4-1-5. Initial Setting" should be completed.
4. Turn off the power before extending the plug-in board using the extension board.
5. When using the camera as 16:9 mode together with the OHB-550WS/550WSP, use the specified grayscale chart (J-6394-080-A).
6. Paste a black colored velvets (around 3 x 3 cm) to both sides of the full white portion in the center of the grayscale chart.
   (For more details, consult your Sony service representative.)
7. When connecting MSU-700 to BVP-550, use MSU-700 for various settings, because the switches on the side panel of the camera become invalid.

4-1-3. Connections


1.5" VF
BVF-10/10CE
CAMERA
ADAPTOR
CA-550/550/P
CCD UNIT
OHB
ENG/EFP LENS
PATTERN
BOX
COLOR VIDEO
CAMERA
BVP-550
DC IN
AC ADAPTOR
AC-550/550CE
MASTER SETUP UNIT
MSU-700
CCA-5 CABLE
(max. 200m)
TEST OUT
A-ch
Waveform monitor
PIX
75Ω
Vector scope
Color monitor
Oscilloscope
75Ω

4-1-4. Description of Setup Menu

A part of adjustments given in this section uses the setup menu. The setup menu consists of the following menus. Besides there is a TOP menu indicating the entire configuration of menu items.

Operation
Paint
Maintenance
Reference File
Triming File
System config

To display all of the menus, switch setting of the AT-95 board is required. And for details on the setup menu, refer to Section 3.

In this manual, describes the setup menu operation as follows.

Title of the selected page (top right corner display)

For reference:
When Paint → Skin Detail is selected:
MENU : Paint
PAGE : Skin Detail (P4)

Displaying Setup Menu

1. Set the internal switches of the AT-95 board as follows.
   S1-1 → ON
   S1-2 → OFF
   S1-3 → ON
   S1-4 → OFF
2. DISP switch (on the side panel) → OFF
3. POWER switch (on the camera adaptor) → ON
4. Set the DISP switch to MENU (from OFF) while holding down the MENU SEL switch (on the front panel). (TOP menu will be displayed.)

Note

If the power switch is turned off once, perform the above operations again to display the setup menu (steps 2 to 4).

How to change the setting values

To enter or cancel the setting value of items, which can be changed by turning the MENU SEL switch, proceed as follows.

To enter the setting value;

Press the MENU SEL switch to ENTER.

To cancel the setting value;

Before pressing the MENU SEL switch, press the CANCEL button. The original setting is restored.
After pressing the MENU SEL switch, the setting can not be canceled.

File Store

If the adjustments in this section are suspended or the power is turned off to extend a printed circuit board and so on, be sure to execute the FILE STORE before being powered off.

4-1-5. Initial Setting

Internal Switches:

Note

When switching the following switches from a customer-set position, it is recommended to record the setting state of the customer in the table below.
After adjustment is complete, be sure to return the switches to their customer-set position.

Board	Switch	Initial setting	Customer-set position
AT-95	S1-1	ON	
	S1-2	OFF	
	S1-3	ON	
	S1-4	OFF	

Setup Menu:

MENU : Operation
PAGE : Gain Sw (?3)
ITEM : Low → 0 dB
ITEM : Middle → 9 dB
ITEM : High → 18 dB
PAGE : Wide Screen (?4)
ITEM : 16:9/4:3 MODE → 16:9
(For OHB-550WS/550WSP)
MENU : Paint
PAGE : Video Level (P1)
ITEM : Test → Off
PAGE : Detail 1 (P2)
ITEM : Detail → On
PAGE : Skin Detail (P4)
ITEM : Skin Detail → Off
PAGE : Gamma (P5)
ITEM : Gamma → On
PAGE : Knee/W.Clip (P6)
ITEM : Knee → Off
ITEM : White Clip → Off
PAGE : Matrix (P7)
ITEM : Matrix → Off

Side Panel:

VTR SAVE/STBY switch → STBY
GAIN switch → L (0 dB)
OUTPUT/DCC switch → CAM/OFF
WHITE BAL switch → PRST

Front Panel:

SHUTTER switch → OFF

Filter Setting:3200 K

OHB-550/550WS series → 1B (FILTER selector)
OHB-450/451 series → 1 (FILTER selector)

Execution of Scene File Standard:

MENU : Paint
PAGE : Scene File (P8)
ITEM : Standard
(Press the MENU SEL switch to execute.)

4-2. Adjustment for Installation of OHB

When the auto black adjustment is executed with the AUTO W/B BAL switch on the front panel for the first time after the OHB is replaced or a new OHB is installed, the black shading is automatically adjusted in succession to the auto black adjustment.
If the shading adjustment is correctly completed at that time, "4-2-3. Black Shading Adjustment" can be skipped.

4-2-1. VCO CONT Frequency Confirmation

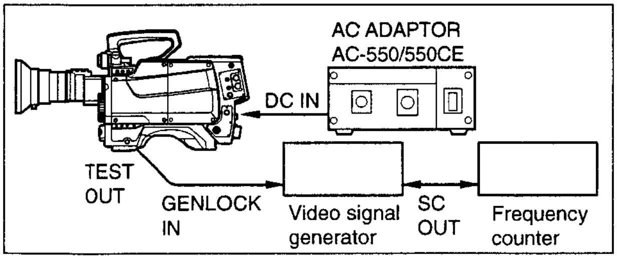
Notes:

- Perform this confirmation only when the CCD unit is installed.
- Warm up the camera for about 10 minutes before performing this confirmation.

Preparation:

- RGB/ENC switch (on the side panel) → ENC

Equipment : Frequency counter, Video signal generator
Test Point : TEST OUT connector
Specifications: 3,579,545 ±10 Hz (for NTSC)
4,433,168 ±5 Hz (for PAL)



If the specification is not satisfied, perform the following adjustment.

Adjustment Procedures:

1. Set the DISP switch (on the side panel) to MENU while holding down the MENU SEL switch (on the front panel).
2. Set the menu as follows and adjust the frequency by using the MENU SEL switch.
   MENU : System config
   PAGE : Y/Chroma (S2)
   ITEM : SC FREQ
   Specifications: 3,579,545 ±10 Hz (for NTSC)
   4,433,168 ±5 Hz (for PAL)

File Store:

Execute the OHB file store. Press the MENU SEL switch to execute.
MENU : Triming File
PAGE : OHB File (T2)
ITEM : File Store

4-2-2. VA Gain Adjustment

Setting of Sensitivity and Standard Color Temperature:

- Use the reflective chart (reflection ratio:89.9%)in this adjustment, if possible.
- If a pattern box is used, it should be well-maintained.
- Set the luminous intensity of the chart to 2000 lx and the color temperature to 3200 K.
- This adjustment shall be performed at F7.0 or more.

Note:

- Never change the setting of the following trimmer capacitors. These capacitors are extremely difficult to adjust in the field.
  VA-163 board :⊘CT200, ⊘CT300, ⊘CT400

Equipment : Oscilloscope, Waveform monitor
Object : Grayscale chart

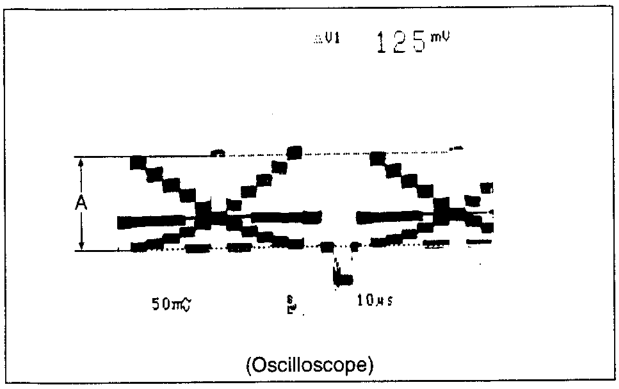
Preparations:

- WHITE BAL switch (on the side panel) → PRST
- GAIN switch (on the side panel) → L (0 dB)
- Extend VA-163 board with EX-464 board.
- RGB/ENC switch (on the side panel) → ENC

Adjustment Procedures:

1. Set the DISP switch (on the side panel) to MENU while holding down the MENU SEL switch (on the front panel).
2. Set the menu as follows.
   MENU : Paint
   PAGE : Knee/W.Clip (P6)
   ITEM : Knee → Off
3. Close the lens iris.
4. Execute the level auto setup.
   Press the MENU SEL switch to execute.
   MENU : Operation
   PAGE : Auto Setup
   ITEM : Level Auto
5. Confirm the black level is 3 IRE for NTSC and 21 mV for PAL at the TEST OUT connector.
   If the black level is out of specs, carry out "4-2-5. Master Black Adjustment".

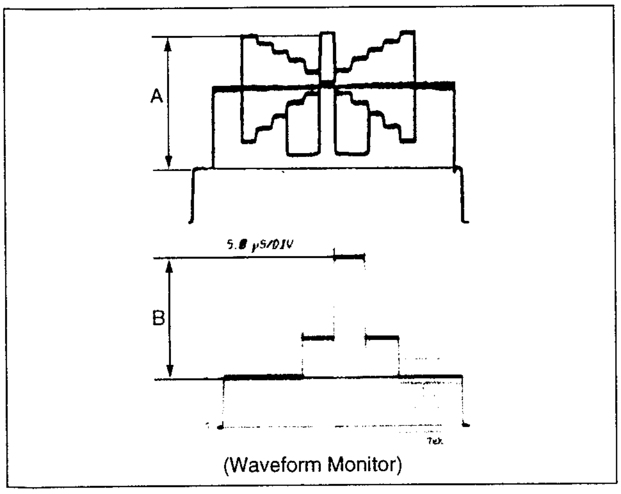
6. **Test Point** : TP72 (GND:TP71)/extension board (extending VA-163)
   Iris of the lens: A = 125 mV (at F7.0 or more)



(Oscilloscope)

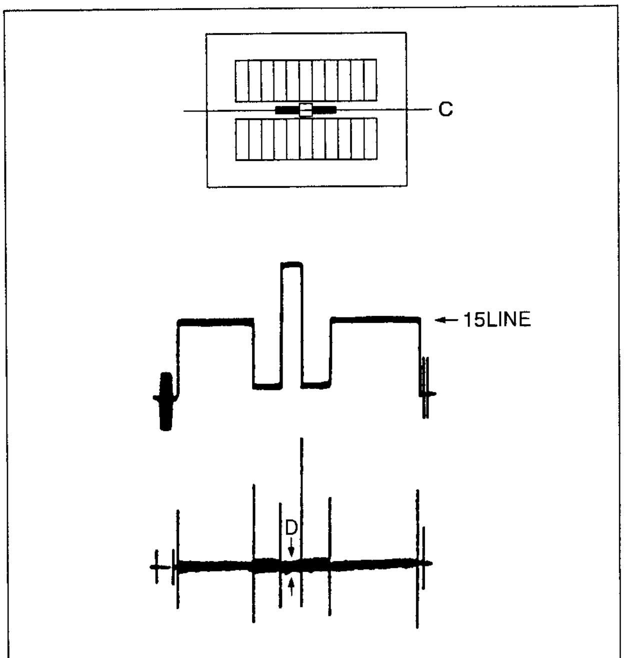
7. Set the RGB/ENC switch (on the side panel) to RGB. Set the R/G/B switch (on the side panel) to G.
8. Adjust the VA gain for G.
   Test Point : TEST OUT connector
   Adjustment Point: ⊘RV300 (G GAIN)/VA-163 panel
   Specifications : The levels A and B are shall be equal when the test waveform is switched between 2 and off.

   Menu Setting:
   MENU : Paint
   PAGE : Knee/W.Clip (P6)
   ITEM : Test

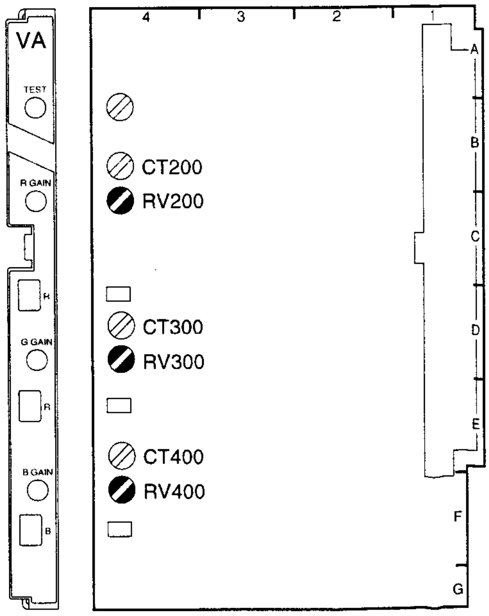


(Waveform Monitor)

9. Set the menu as follows.
   MENU : Paint
   PAGE : Knee/W.Clip (P6)
   ITEM : Test → Off
10. Select the 15 lines in the center of monitor screen C by using the 15 LINE SELECT on the waveform monitor.
11. Put the waveform monitor into the CHROMA mode.
12. Set the RGB/ENC switch (on the side panel) to ENC.
13. **Test Point** : TEST OUT connector
    Adjustment Point: ⊘RV200 (R GAIN)/VA-163 panel
    ⊘RV400 (B GAIN)/VA-163 panel
    Specifications : Carrier leakage D = Minimum



(Waveform Monitor)



VA-163 BOARD (A SIDE)

4-2-3. Black Shading Adjustment

Notes:

- The compensation data obtained by the black shading adjustment is not stored in the OHB File. Therefore, when the OHB is replaced or a new OHB is installed, be sure to perform this adjustment.
- If the shading adjustment is not completed, perform the adjustment again referring to the message displayed on the viewfinder or MSU.
  If the re-adjustment still is not completed, consult Sony service representative.

Preparations:

- Connect the waveform monitor to the TEST OUT connector.
- RGB/ENC switch (on the side panel) → ENC

Test Point : TEST OUT connector
Iris of the lens: CLOSE

Adjustment Procedures:

1. Set the DISP switch (on the side panel) to MENU while holding down the MENU SEL switch (on the front panel).
2. Set the menu as follows and execute the auto black shading. Press the MENU SEL switch to execute.
   MENU : Maintenance
   PAGE : Auto Setup(M4)
   ITEM : Black Shading
3. Confirm the "OK" is displayed on the viewfinder or MSU. If the error message is displayed, perform the adjustment again referring to this message.

Message and its meaning

BLACK:OK	: Adjustment correctly completed.
LEVEL TOO HIGH	: Lens closing does not operate fully, and so on.
TIME LIMIT	: Black shading adjustment could not be completed within the specified number of attempts.
OVER FLOW	: The difference between the reference value and the current value is too great, and exceeds adjustment range. Adjustment is then not completed.

4. Confirm the carrier level satisfies the specification on the waveform monitor.
   Specifications: Less than 2 IRE (for NTSC)
   Less than 14 mV (for PAL)

• Manual Black Shading Adjustment (For reference)

Note:

- Perform this adjustment only when "4-2-3. Black Shading Adjustment" is not completed.

Equipment : Waveform monitor

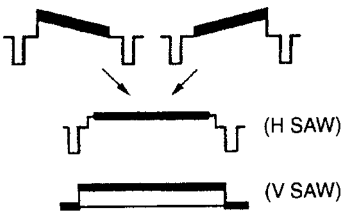
Preparations:

- Connect the waveform monitor to the TEST OUT connector.
- GAIN switch (on the side panel) → H (18 dB)

Test Point : TEST OUT connector
Iris of the lens : CLOSE

Adjustment Procedures:

1. Set the waveform monitor as follows.
   - LUM mode
   - VOLTFULL SCALE range → 0.5
2. Set the ENC/RGB switch (on the side panel) to RGB. Set the R/G/B switch (on the side panel) to G.
3. Set the DISP switch (on the side panel) to MENU while holding down the MENU SEL switch (on the front panel).
4. Set the menu as follows, and adjust the master black level to 3 IRE for NTSC and 21 mV for PAL by using the MENU SEL switch.
   MENU : Maintenance
   PAGE : Black Shading (M3)
   ITEM : Black M
5. If the shading is monitored, make the waveform flat referring to the following table.
6. Perform the adjustments for R-ch and B-ch with the same procedures as for G-ch.

	Switch	H SAW PAGE: Black Shading (M3)	V SAW PAGE: Black Shading (M3)
R	ENC/RGB → RGB R/G/B → R	ITEM: H Saw (R)	ITEM: V Saw (R)
G	ENC/RGB → RGB R/G/B → G	ITEM: H Saw (G)	ITEM: V Saw (G)
B	ENC/RGB → RGB R/G/B → B	ITEM: H Saw (B)	ITEM: V Saw (B)
TEST OUT connector			

Resetting after Adjustment:

- ENC/RGB switch (on the side panel) → ENC
- GAIN switch (on the side panel) → L (0 dB)

4-2-4. White Shading Adjustment

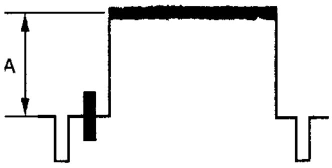
Note:

- This adjustment could not be correctly performed if the uneven white patten is used, luminance is not correct, or lens iris and lens zoom are not in good conditions.

Equipment : Waveform monitor
Test Point : TEST OUT connector
Object : Full white pattern

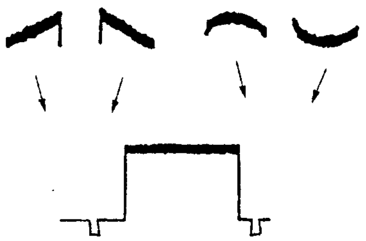
Preparations:

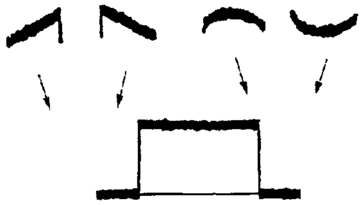
- Connect the waveform monitor to the TEST OUT connector.
- ENC/RGB switch (on the side panel) → ENC
- Set the DISP switch (on the side panel) to MENU while holding down the MENU SEL switch (on the front panel). Set the menu as follows.
  MENU : Paint
  PAGE : Knee/W.Clip (P6)
  ITEM : Knee → Off
- Shoot the fully occupied white area of the pattern box in the full underscanned monitor frame adjusting the zoom control.
  Iris of the lens : A = 80 ±5 IRE (for NTSC)
  A = 560 ±35 mV (for PAL)



Adjustment Procedures:

1. Set the WHITE BAL switch (on the side panel) to PRST.
2. Set the waveform monitor as follows.
   - LUM mode
   - VOLTFULL SCAN range → 0.5
3. Set the ENC/RGB switch (on the side panel) to RGB. Set the R/G/B switch (on the side panel) to G.
4. If the white shading is monitored, make the waveform flat referring to the following tables.
5. Perform the adjustments for R-ch and B-ch with the same procedures as for G-ch.

	Switch	H SAW PAGE: White Shading (M2)	H PARA PAGE: White Shading (M2)
R	ENC/RGB → RGB R/G/B → R	ITEM: H Saw (R)	ITEM: H Para (R)
G	ENC/RGB → RGB R/G/B → G	ITEM: H Saw (G)	ITEM: H Para (G)
B	ENC/RGB → RGB R/G/B → B	ITEM: H Saw (B)	ITEM: H Para (B)
TEST OUT connector			

	Switch	V SAW PAGE: White Shading (M2)	V PARA PAGE: White Shading (M2)
R	ENC/RGB → RGB R/G/B → R	ITEM: V Saw (R)	ITEM: V Para (R)
G	ENC/RGB → RGB R/G/B → G	ITEM: V Saw (G)	ITEM: V Para (G)
B	ENC/RGB → RGB R/G/B → B	ITEM: V Saw (B)	ITEM: V Para (B)
TEST OUT connector			

File Store:

Execute the file store. Press the MENU SEL switch to execute.

MENU : Reference File
PAGE : Reference File (R1)
ITEM : File Store

Resetting after Adjustment:

- ENC/RGB switch (on the side panel) → ENC

4-2-5. Master Black Adjustment

Equipment : Waveform monitor
Test Point : TEST OUT connector

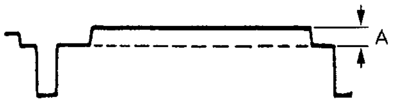
Preparations:

- Connect the waveform monitor to the TEST OUT connector.
- RGB/ENC switch (on the side panel) → RGB
- R/G/B switch (on the side panel) → G

Iris of the lens: CLOSE

Adjustment Procedures:

1. Set the waveform monitor as follows.
   - LUM mode
2. Set the DISP switch (on the side panel) to MENU while holding down the MENU SEL switch (on the front panel).
3. Set the menu as follows, and adjust the black level by using the MENU SEL switch.
   MENU : Paint
   PAGE : Video Level (P1)
   ITEM : Black [M]
   Specifications: A = 3 ±1 IRE (for NTSC)
   A = 21 ±7 mV (for PAL)



(Waveform Monitor)

3. Set the RGB/ENC switch (on the side panel) to ENC.
4. Adjust the auto black balance.
   AUTO W/B BAL switch (on the front panel) → BLK

File Store:

Execute the file store. Press the MENU SEL switch to execute.

MENU : Reference File
PAGE : Reference File (R1)
ITEM : File Store

4-2-6. Gamma Correction Adjustment

Equipment : Waveform monitor, Vectorscope
Test Point : TEST OUT connector
Object : Grayscale chart

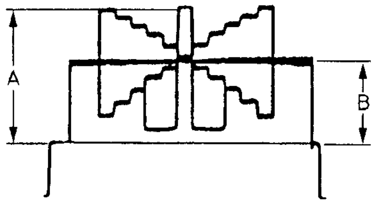
Preparations:

- Connect the waveform monitor to the TEST OUT connector.
- Connect the vectorscope to the PIX OUT terminal on the waveform monitor.
- Shoot the grayscale chart so that the chart frame is aligned with the underscanned monitor frame.
- RGB/ENC switch (on the side panel) → ENC
- Set the DISP switch (on the side panel) to MENU while holding down the MENU SEL switch (on the front panel). Set the menu as follows.
  MENU : Paint
  PAGE : Knee/W.Clip (P6)
  ITEM : Knee → Off

Iris of the lens : A = 100 ±2 IRE (for NTSC)
A = 700 ±14 mV (for PAL)

Adjustment Procedures:

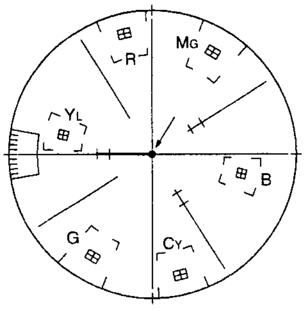
1. Set the RGB/ENC switch (on the side panel) to RGB. Set the R/G/B switch (on the side panel) to G.
2. Set the menu as follows, and adjust the gamma correction for (M) by using the MENU SEL switch.
   PAGE : Video Level (P1)
   ITEM : Gamma [M]
   Specifications: B = 55.5 ±2.0 IRE (for NTSC)
   B = 420 ±14 mV (for PAL)



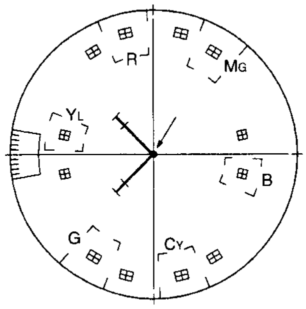
(Waveform Monitor)

3. Set the menu as follows.
   MENU : Paint
   PAGE : Video Level (P1)
   ITEM : Test → 1
4. Set the RGB/ENC switch (on the side panel) to ENC.
5. Adjust the auto white balance.
   WHITE BAL switch (on the side panel) → A
   AUTO W/B BAL switch (on the front panel) → WHT
6. Set the menu as follows, and adjust the gamma correction for (R) by using the MENU SEL switch.
   MENU : Paint
   PAGE : Video Level (P1)
   ITEM : Gamma [R]
   Specifications: Center the beam spot on the vectorscope.
7. Set the menu as follows, and adjust the gamma correction for (B) by using the MENU SEL switch.
   MENU : Paint
   PAGE : Video Level (P1)
   ITEM : Gamma [B]
   Specifications: Center the beam spot on the vectorscope.

8. Repeat the steps 6 and 7 alternately, until the beam spot is minimized on the vectorscope.



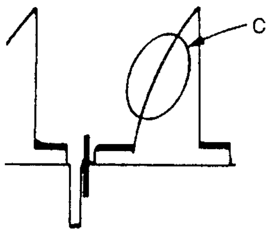
(For NTSC)



(For PAL)

(Vectorscope)

9. Confirm that the carrier leakage does not observed at portion C on the waveform monitor.
   Specifications: C = Minimum



(Waveform Monitor)

Resetting after Adjustment:

- Set the menu as follows.
  MENU : Paint
  PAGE : Video Level (P1)
  ITEM : Test → Off
- WHITE BAL switch (on the side panel) → PRST

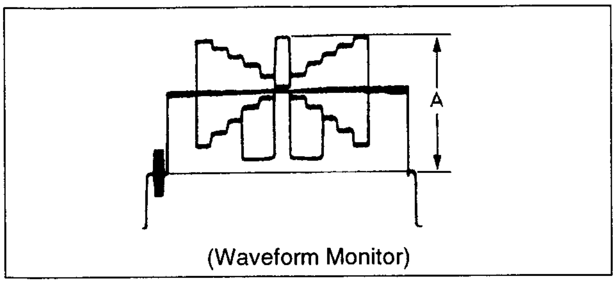
4-2-7. Flare Adjustment

Equipment : Waveform monitor
Test Point : TEST OUT connector
Object : Grayscale chart

Preparations:

- Connect the waveform monitor to the TEST OUT connector.
- Shoot the grayscale chart so that the chart frame is aligned with the underscanned monitor frame.
- RGB/ENC switch (on the side panel) → ENC
- Set the DISP switch (on the side panel) to MENU while holding down the MENU SEL switch (on the front panel). Set the menu as follows.
  MENU : Paint
  PAGE : Knee/W.Clip (P6)
  ITEM : Knee → Off

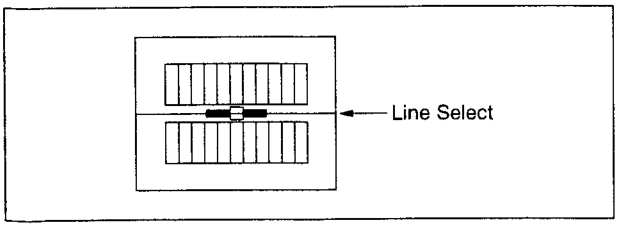
Iris of the lens : A = 100 ±2 IRE (for NTSC)
A = 700 ±14 mV (for PAL)



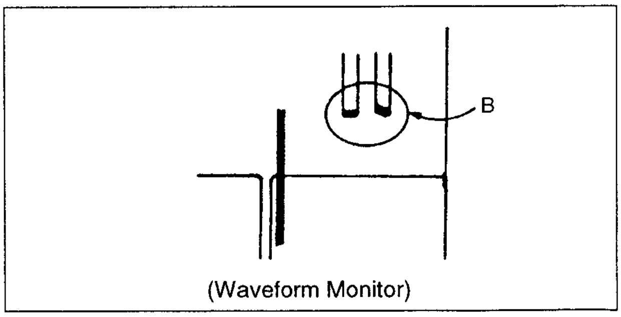
(Waveform Monitor)

Adjustment Procedures:

1. Adjust the auto white balance.
   WHITE BAL switch (on the side panel) → A
   AUTO W/B BAL switch (on the front panel) → WHT
2. Open the iris control of the lens by two stops against the reference setup (corresponding above A).
3. Set the RGB/ENC switch (on the side panel) to ENC.
   Set the R/G/B switch (on the side panel) to G.
4. Select the 15 lines in the center of the monitor screen by using the 15 LINESELECT on the waveform monitor.



5. Confirm that the level at portion B does not fluctuate even if the flare turns On/Off. If fluctuates, turn Flare ON and adjust by Flare (G).
   Menu Setting:
   MENU : Paint
   PAGE : Video Level (P1)
   ITEM : Flare → On/Off
   Adjustment Point:
   ITEM : Flare [G]
6. Set the ENC/RGB switch (on the side panel) to ENC.
7. Set the menu as follows, and adjust the flare for R by using the MENU SEL switch.
   MENU : Paint
   PAGE : Video Level (P1)
   ITEM : Flare [R]
   Specifications: Minimize the carrier leakage.
8. Set the menu as follows, and adjust the flare for B by using the MENU SEL switch.
   MENU : Paint
   PAGE : Video Level (P1)
   ITEM : Flare [B]
   Specifications: Minimize the carrier leakage.



(Waveform Monitor)

9. Repeat the steps 7 and 8 alternately, until the carrier leakage is minimized.

File Store:

Execute the file store. Press the MENU SEL switch to execute.
MENU : Reference File
PAGE : Reference File (R1)
ITEM : File Store

Resetting after Adjustment:

- WHITE BAL switch (on the side panel) → PRST

4-2-8. Knee and White Clip Adjustment

Note:

Perform this adjustment on the customer's preferences, if necessary.

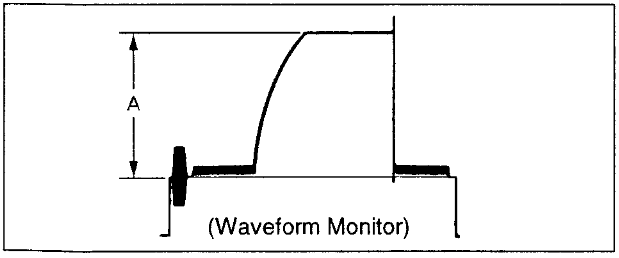
Equipment : Waveform monitor
Test Point : TEST OUT connector

Preparations:

- Connect the waveform monitor to the TEST OUT connector.
- OUTPUT/DCC switch (on the side panel) → CAM/OFF
- RGB/ENC switch (on the side panel) → ENC
- WHITE BAL switch (on the side panel) → PRST
- GAIN switch (on the side panel) → M(9 dB)

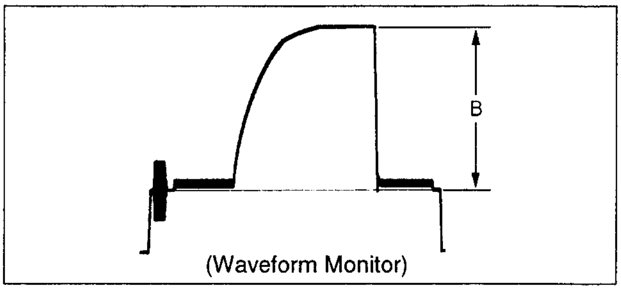
Adjustment Procedures:

1. Confirm the black level is 3 IRE for NTSC and 21 mV for PAL.
2. Set the DISP switch (on the side panel) to MENU while holding down the MENU SEL switch (on the front panel).
3. Set the menu as follows, and adjust the knee point level by using the MENU SEL switch.
   MENU : Paint
   PAGE : Knee/W.Clip (P6)
   ITEM : Test → 1
   ITEM : White Clip → Off
   ITEM : Knee → On
   ITEM : Knee Max → On
   Adjustment Point:
   ITEM : Point
   Specifications: A = 98 ±2 IRE (for NTSC)
   A = 686 ±10 mV (for PAL)



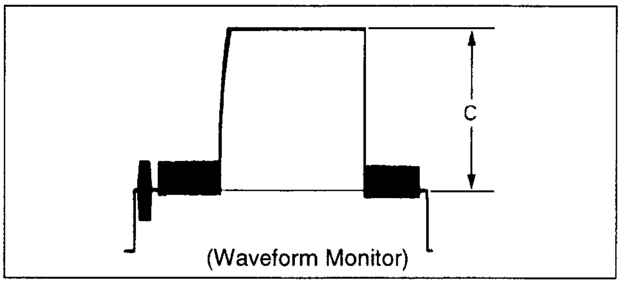
(Waveform Monitor)

4. Set the menu as follows, and adjust the knee slope level by using the MENU SEL switch.
   MENU : Paint
   PAGE : Knee/W.Clip (P6)
   ITEM : Knee Max → Off
   Adjustment Point:
   ITEM : Slope
   Specifications: B = 109 ±2 IRE (for NTSC)
   B = 763 ±10 mV (for PAL)



(Waveform Monitor)

5. Set the GAIN switch (on the side panel) to H (18 dB).
6. Set the menu as follows, and adjust the white clip level by using the MENU SEL switch.
   MENU : Paint
   PAGE : Knee/W.Clip (P6)
   ITEM : White Clip → On
   Adjustment Point:
   ITEM : White Clip
   Specifications: C = 109 ±2 IRE (for NTSC)
   C = 750 ±10 mV (for PAL)



(Waveform Monitor)

Resetting after Adjustment:

- Set the menu as follows.
  MENU : Paint
  PAGE : Knee/W.Clip (P6)
  ITEM : Test → Off
- GAIN switch (on the side panel) → L (0 dB).

Note:

The values used in the above adjustments are under the conditions that the white clip level is set to 109 IRE (for NTSC) or 763 mV (for PAL).

When the white clip level is set to other value than 109 IRE or 763 mV, use the following table to set the levels of the knee point and knee slope.

	White Clip Level (Unit: IRE/mV)			
	109/763	107/749	105/735	103/721
Knee point	98/686	98/686	96/672	96/672
Knee slope	109/763	109/763	107/750	107/750
White clip	109/763	107/749	105/735	103/721

4-2-9. Crispening Adjustment

Note:

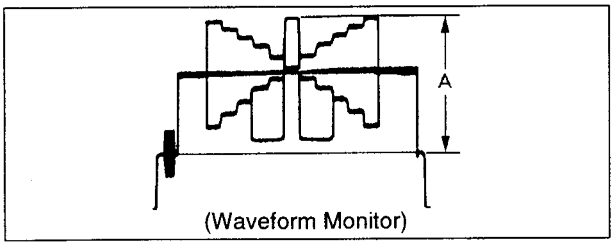
- Perform this adjustment on the customer's preferences, if necessary.

Equipment : Waveform monitor
Test Point : TEST OUT connector
Object : Grayscale chart

Preparations:

- Connect the waveform monitor to the TEST OUT connector.
- Shoot the grayscale chart so that the chart frame is aligned with the underscanned monitor frame.
- RGB/ENC switch (on the side panel) → ENC
- Set the DISP switch (on the side panel) to MENU while holding down the MENU SEL switch (on the front panel). Set the menu as follows.
  MENU : Paint
  PAGE : Detail 1 (P2)
  ITEM : Detail → On

Iris of the lens : A = 90 ±2 IRE (for NTSC)
A = 630 ±14 mV (for PAL)



(Waveform Monitor)

Adjustment Procedure:

Set the menu as follows, and adjust the crispening by using the MENU SEL switch.

MENU : Paint
PAGE : Detail 1(P2)
ITEM : Crispening
Specifications : Turn the MENU SEL switch (on the front panel) once to –99, and turn slowly for increment until the noise at the black level of the waveform is just decreased, or turn the MENU SEL switch so that the crispening level is an appropriate value.

4-2-10. Level Dependent Adjustment

Note:

- Perform this adjustment on the customer's preferences, if necessary.

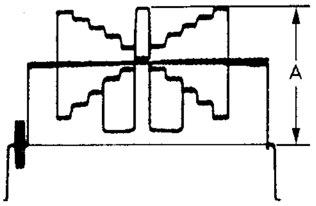
Equipment : Waveform monitor
Test Point : TEST OUT connector
Object : Grayscale chart

Preparations:

- Connect the waveform monitor to the TEST OUT connector.
- Shoot the grayscale chart so that the chart frame is aligned with the underscanned monitor frame.
- RGB/ENC switch (on the side panel) → ENC
- Set the DISP switch (on the side panel) to MENU while holding down the MENU SEL switch (on the front panel). Set the menu as follows.
  MENU : Paint
  PAGE : Detail 1 (P2)
  ITEM : Detail → On
  ITEM : Level Dep. → On

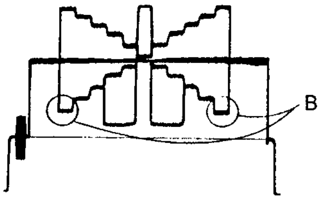
Adjustment Procedures:

1. **Iris of the lens**: A = 90 ±2 IRE (for NTSC)
   A = 630 ±14 mV (for PAL)



(Waveform Monitor)

2. Set the menu as follows, and adjust the level dependent by using the MENU SEL switch.
   MENU : Paint
   PAGE : Detail 1 (P2)
   ITEM : Level Dep.
   Specifications: Turn the MENU SEL switch (on the front panel) once to –99, and slowly turn it for increment until spikes at portions B are just decreased.



(Waveform Monitor)

Note:

After this adjustment is completed, be sure to perform "4-2-12. H/V Ratio Adjustment" and "4-2-13. Detail Level Adjustment".

4-2-11. Detail Frequency Adjustment

Note:

- Perform this adjustment on the customer's preferences, if necessary.

Equipment : Waveform monitor
Test Point : TEST OUT connector
Object : Grayscale chart

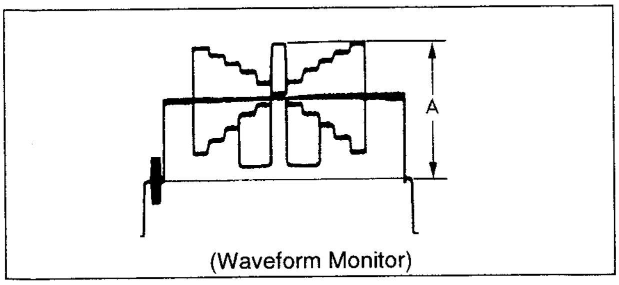
Preparations:

- Connect the waveform monitor to the TEST OUT connector.
- Shoot the grayscale chart so that the chart frame is aligned with the underscanned monitor frame.
- RGB/ENC switch (on the side panel) → ENC
- Set the DISP switch (on the side panel) to MENU while holding down the MENU SEL switch (on the front panel). Set the menu as follows.

  MENU : Paint
  PAGE : Detail 2 (P3)
  ITEM : Detail → On
  PAGE : Knee/W.Clip (P6)
  ITEM : Knee → Off

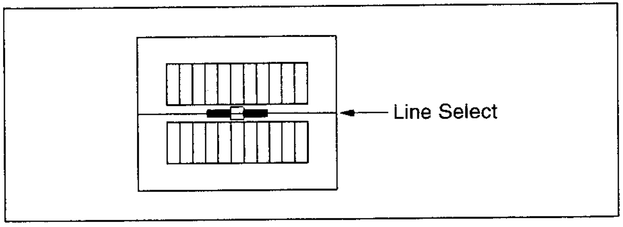
Adjustment Procedures:

1. **Iris of the lens**: A = 90 ±2 IRE (for NTSC)
   A = 630 ±14 mV (for PAL)



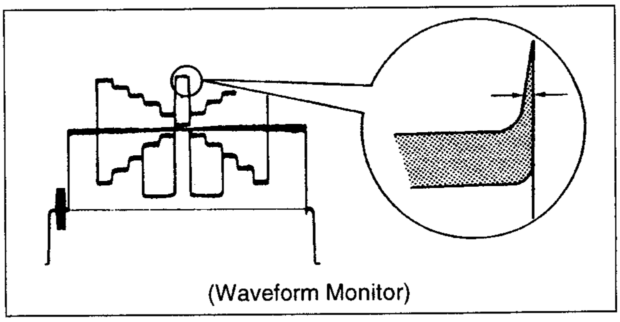
(Waveform Monitor)

2. Make a selection of line at the center white portion of the grayscale chart.



3. Set the menu as follows, and adjust the detail frequency by using the MENU SEL switch.

   MENU : Paint
   PAGE : Detail 2 (P3)
   ITEM : Frequency
   Specifications: Adjust the edge width at each end of the center white portion to the desired width.



(Waveform Monitor)

Note:

After this adjustment is completed, be sure to perform "4-2-12. H/V Ratio Adjustment" and "4-2-13. Detail Level Adjustment".

4-2-12. H/V Ratio Adjustment

Note:

- Perform this adjustment on the customer's preferences, if necessary.

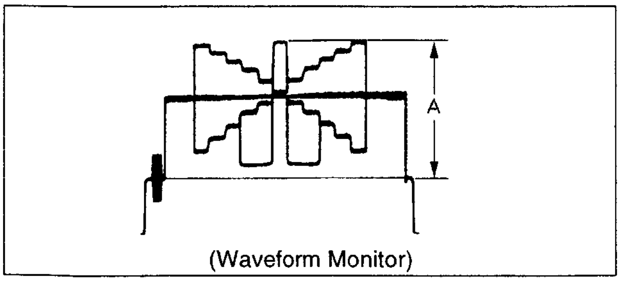
Equipment : Waveform monitor
Test Point : TEST OUT connector
Object : Grayscale chart

Preparations:

- Connect the waveform monitor to the TEST OUT connector.
- Shoot the grayscale chart so that the chart frame is aligned with the underscanned monitor frame.
- RGB/ENC switch (on the side panel) → ENC
- Set the DISP switch (on the side panel) to MENU while holding down the MENU SEL switch (on the front panel). Set the menu as follows.
  MENU : Paint
  PAGE : Detail 2 (P3)
  ITEM : Detail → On
  PAGE : Knee/W.Clip (P6)
  ITEM : Knee → Off

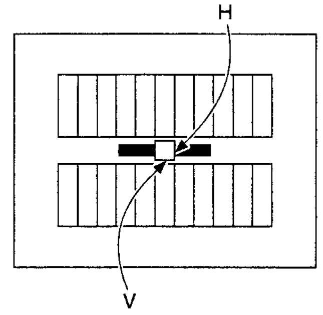
Adjustment Procedures:

1. **Iris of the lens**: A = 90 ±2 IRE (for NTSC)
   A = 630 ±14 mV (for PAL)



(Waveform Monitor)

2. Set the menu as follows, and adjust the H/V ratio by using the MENU SEL switch.
   MENU : Paint
   PAGE : Detail 2 (P3)
   ITEM : H/V Ratio
   Specifications: The ratio between the H and V detail amounts (white) to be added shall be 1 : 1.



(Monitor Screen)

4-2-13. Detail Level Adjustment

Note:

- Perform this adjustment on the customer's preferences, if necessary.

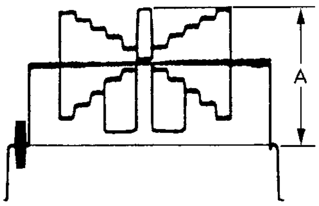
Equipment : Waveform monitor
Test Point : TEST OUT connector
Object : Grayscale chart

Preparations:

- Connect the waveform monitor to the TEST OUT connector.
- Shoot the grayscale chart so that the chart frame is aligned with the underscanned monitor frame.
- RGB/ENC switch (on the side panel) → ENC
- Set the DISP switch (on the side panel) to MENU while holding down the MENU SEL switch (on the front panel). Set the menu as follows.
  MENU : Paint
  PAGE : Detail 1 (P2)
  ITEM : Detail → On

Adjustment Procedures:

1. **Iris of the lens**: A = 90 ±2 IRE (for NTSC)
   A = 630 ±14 mV (for PAL)



(Waveform Monitor)

2. Set the menu as follows, and adjust the signal level by using the MENU SEL switch.
   MENU : Paint
   PAGE : Detail 1 (P2)
   ITEM : Level
   Specifications: Adjust the detail signal level to be added to each step in the grayscale chart for the desired level.

4-2-14. Detail Clip Adjustment

Note:

- Perform this adjustment on the customer's preferences, if necessary.

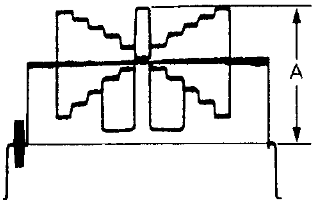
Equipment : Waveform monitor
Test Point : TEST OUT connector
Object : Grayscale chart

Preparations:

- Connect the waveform monitor to the TEST OUT connector.
- Shoot the grayscale chart so that the chart frame is aligned with the underscanned monitor frame.
- RGB/ENC switch (on the side panel) → ENC
- Set the DISP switch (on the side panel) to MENU while holding down the MENU SEL switch (on the front panel). Set the menu as follows.
  MENU : Paint
  PAGE : Detail 2 (P3)
  ITEM : Detail → On
  PAGE : Knee/W.Clip (P6)
  ITEM : Knee → Off

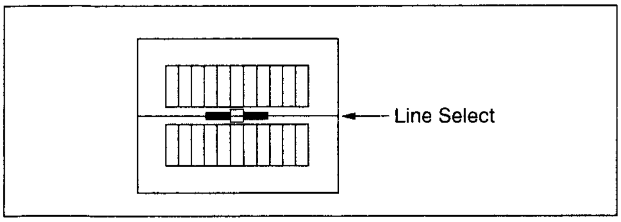
Adjustment Procedures:

1. **Iris of the lens**: A = 90 ±2 IRE (for NTSC)
   A = 630 ±14 mV (for PAL)

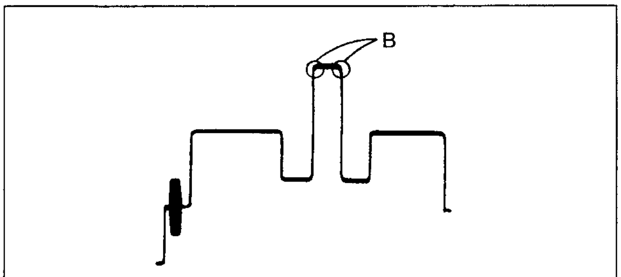


(Waveform Monitor)

2. Make a selection of line at the center white portion of the grayscale chart.

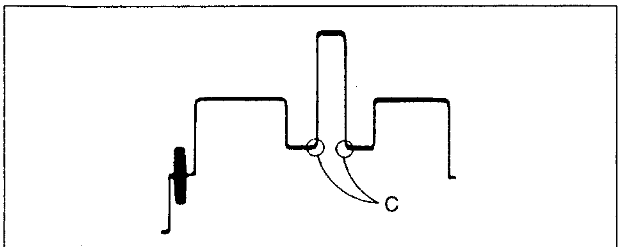


3. Set the menu as follows, and adjust the white limiter by using the MENU SEL switch.
   MENU : Paint
   PAGE : Detail 2 (P3)
   ITEM : W.Limitter
   Specifications: Adjust the edges of portions B to the desired clip level.



(Waveform Monitor)

4. Set the menu as follows, and adjust the black limiter by using the MENU SEL switch.
   MENU : Paint
   PAGE : Detail 2 (P3)
   ITEM : B.Limitter
   Specifications: Adjust the edges of portions C to the desired clip level.



(Waveform Monitor)

4-2-15. Skin Tone Adjustment

Note:

- Perform this adjustment on the customer's preferences, if necessary.

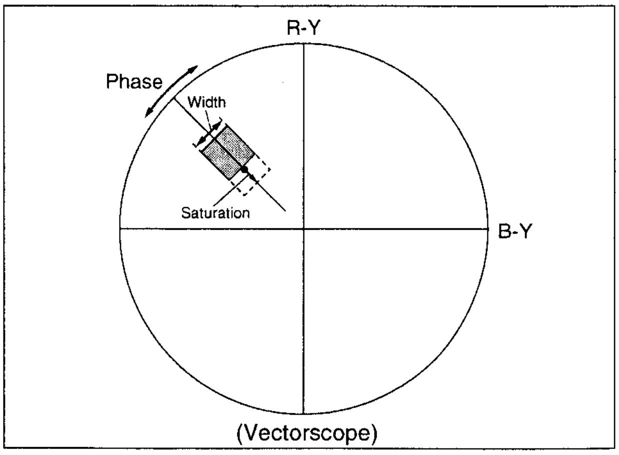
Equipment : Color monitor, Viewfinder or Vectorscope

Preparations:

- Connect the vectorscope to the TEST OUT connector.
- Shoot a person's face.
- Set the DISP switch (on the side panel) to MENU while holding down the MENU SEL switch (on the front panel). Set the menu as follows.
  MENU : Paint
  PAGE : Skin Detail (P4)
  ITEM : Skin Detail → On

Adjustment Procedures:

1. Set the menu as follows.
   MENU : Paint
   PAGE : Skin Detail (P4)
   ITEM : Gate → On
2. Set the menu as follows, and adjust the amount of the skin detail signal to the desired level according to the following items by using the MENU SEL switch.
   MENU : Paint
   PAGE : Skin Detail (P4)
   ITEM : Level (Detail level within the skin gate)
   ITEM : Phase (Hue)
   ITEM : Saturation
   (Component in the saturation direction)
   ITEM : Width (Component in the hue direction)
   (The effective area of the skin detail signal appears in a zebra pattern on the viewfinder screen. Set the desired level.)



(Vectorscope)

Resetting after Adjustment:

- Set the menu as follows.

  MENU : Paint
  PAGE : Skin Detail (P4)
  ITEM : Gate → Off

4-2-16. Zebra Adjustment

Note:

- Perform this adjustment on the customer's preferences, if necessary.

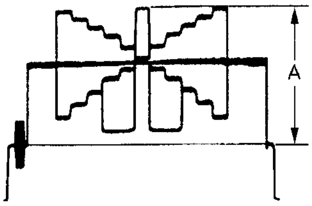
Equipment : Waveform monitor
Test Point : TEST OUT connector
Object : Grayscale chart

Preparations:

- Connect the waveform monitor to the TEST OUT connector.
- Shoot the grayscale chart so that the chart frame is aligned with the underscanned monitor frame.
- RGB/ENC switch (on the side panel) → ENC
- ZEBRA switch (on the viewfinder) → ON
- Set the DISP switch (on the side panel) to MENU while holding down the MENU SEL switch (on the front panel). Set the menu as follows.
  MENU : Paint
  PAGE : Knee/W.Clip (P6)
  ITEM : Knee → Off

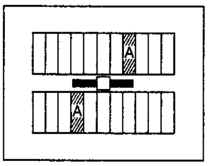
Adjustment Procedures:

1. Adjust the auto white balance.
   WHITE BAL switch (on the side panel) → A
   AUTO W/B BAL switch (on the front panel) → WHT
2. **Iris of the lens**: A = 100 ±2 IRE (for NTSC)
   A = 700 ±14 mV (for PAL)



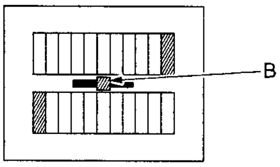
(Waveform Monitor)

3. Set the menu as follows, and adjust the zebra 1 level by using the MENU SEL switch.
   MENU : System config
   PAGE : Pre knee/Zebra (S4)
   ITEM : Z.Disp → 1
   Adjustment Point:
   ITEM : Zebra1 [LEVEL]
   Specifications: Adjust that the stripes appear at the center of the portions A on the viewfinder screen.
   The area of the stripes can be changed by ITEM: Zebla 1 [RANGE].



(Monitor Screen)

4. Set the menu as follows, and adjust the zebra 2 level by using the MENU SEL switch.
   MENU : System config
   PAGE : Pre knee/Zebra (S4)
   ITEM : Z.Disp → 2
   Adjustment Point:
   ITEM : Zebra2 [LEVEL]
   Specifications: Adjust that the stripes appear at the center of the portions B on the viewfinder screen.



(Monitor Screen)

Resetting after Adjustment:

- ZEBRA switch (on the viewfinder) → OFF
- WHITE BAL switch (on the side panel) → PRST

4-2-17. Auto Iris Adjustment

Note:

- Perform this adjustment on the customer's preferences, if necessary.

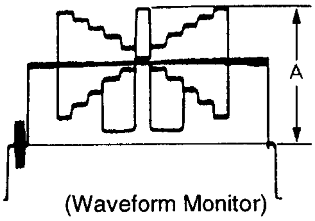
Equipment : Waveform monitor
Test Point : TEST OUT connector
Object : Grayscale chart

Preparations:

- Connect the waveform monitor to the TEST OUT connector.
- Shoot the grayscale chart so that the chart frame is aligned with the underscanned monitor frame.
- RGB/ENC switch (on the side panel) → ENC
- AUTO/MANU switch (on the lens) → AUTO
- Set the DISP switch (on the side panel) to MENU while holding down the MENU SEL switch (on the front panel). Set the menu as follows.
  MENU : Paint
  PAGE : Knee/W.Clip (P6)
  ITEM : Knee → Off

Adjustment Procedures:

1. Adjust the auto white balance.
   WHITE BAL switch (on the side panel) → A
   AUTO W/B BAL switch (on the front panel) → WHT
2. Set the menu as follows, and adjust the APL ratio by using the MENU SEL switch.
   MENU : Operation
   PAGE : Auto Iris/Auto Knee (?6)
   ITEM : APL Ratio
   Specifications: Adjust the auto-iris operation mode depending on the application.
   Note : Automatic iris operation mode setting can be done from the average level to peak-to-peak level of the video signal.
   99 → average level
   –99 → peak-to-peak level
3. Set the menu as follows, and adjust the auto-iris level by using the MENU SEL switch.
   MENU : Operation
   PAGE : Auto Iris/Auto Knee (?6)
   ITEM : Iris Override → Off
   Adjustment Point:
   MENU : System config
   PAGE : Iris (S6)
   ITEM : Level
   Specifications: A = 100 ±2 IRE (for NTSC)
   A = 700 ±14 mV (for PAL)



(Waveform Monitor)

Resetting after Adjustment:

- WHITE BAL switch (on the side panel) → PRST

4-2-18. Menu Settings After Finishing Adjustment

MENU : Paint
PAGE : Detail 1 (P2)
ITEM : Detail → On
PAGE : Gamma (P5)
ITEM : Gamma → On
PAGE : Knee/W.Clip (P6)
ITEM : Knee → On

4-2-19. File Store

Be sure to execute the file store after any one of the adjustments of Sections 4-2-1 through 4-2-17 is performed.

Procedures:

1. Set the DISP switch (on the side panel) to MENU while holding down the MENU SEL switch (on the front panel).
2. Execute the reference file store. Press the MENU SEL switch to execute.
   Menu Setting:
   MENU : Reference File
   PAGE : Reference File (R1)
   ITEM : File Store
3. Execute the triming file store. Press the MENU SEL switch to execute.
   Menu Setting:
   MENU : Triming File
   PAGE : Triming File (T1)
   ITEM : File Store

4-3. Overall Electrical Alignment

Before beginning this adjustment, check the initial settings referring to Section 4-1-5. When a board was replaced or repaired, preset the compensation data, proceeding as follows. If the data is preset once, be sure to carry out all steps of 4-3-1 through 4-3-23. Because presetting clears all adjustment data of video and detail system.

(1) Execute the reference file clear.
Press the MENU SEL switch to execute.
MENU : Reference File
PAGE : Reference File (R1)
ITEM : Clear File

(2) Execute the scene file standard.
Press the MENU SEL switch to execute.
MENU : Paint
PAGE : Scene File (P8)
ITEM : Standard

This section provides intructions to store the setting data on the reference or triming file in every adjustment item. This intends to prevent the data from being cleared when the unit is powered off to extend a board, and so on.
As the data is kept held unless powered off, however, more than one data can be stored at a time.
The file store may not necessarily be executed for every adjustment item.

4-3-1. VCO CONT Frequency Adjustment

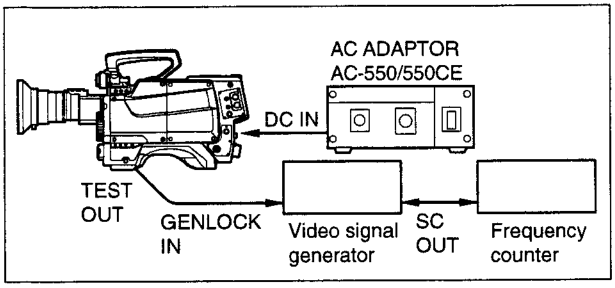
Note:

- Warm up the camera for about 10 minutes before this confirmation.

Equipment	: Frequency counter, Video signal generator
Test Point	: TEST OUT connector

Preparation:

- RGB/ENC switch (on the side panel) → ENC


AC ADAPTOR
AC-550/550CE
DC IN
TEST OUT
GENLOCK IN
Video signal generator
SC OUT
Frequency counter

Adjustment Procedures:

1. Set the DISP switch (on the side panel) to MENU while holding down the MENU SEL switch (on the front panel).
2. Set the menu as follows and adjust the frequency by using the MENU SEL switch.

MENU	: System config
PAGE	: Y/Chroma (S2)
ITEM	: SC FREQ
Specifications	: 3,579,545 ±10 Hz (for NTSC) 4,433,168 ±5 Hz (for PAL)

File Store:

Execute the OHB file store. Press the MENU SEL switch to execute.

MENU	: Triming File
PAGE	: OHB File (T2)
ITEM	: File Store

4-3-2. VTR Y Adjustment

Equipment : Oscilloscope
Test Point : TP3 (Y)/DA-88 panel

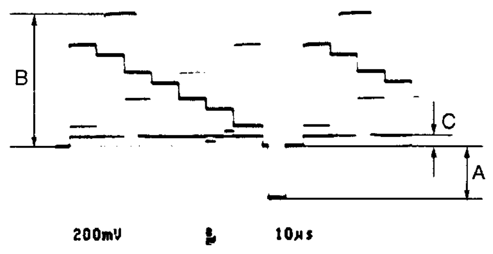
Preparations:

- OUTPUT/DCC switch (on the side panel) → BARS
- RGB/ENC switch (on the side panel) → ENC
- WHITE BAL switch (on the side panel) → PRST

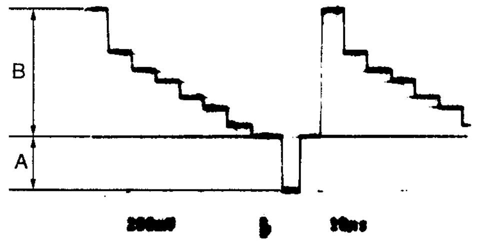
Adjustment Procedures:

1. Set the DISP switch (on the side panel) to MENU while holding down the MENU SEL switch (on the front panel).
2. Set the menu as follows, and adjust the Y sync by using the MENU SEL switch.
   MENU : System config
   PAGE : Y/Chroma (S2)
   ITEM : Y SYNC
   Specifications: A = 286 ±2 mV (for NTSC)
   A = 300 ±2 mV (for PAL)

3. (NTSC only)
   Set the menu as follows, and adjust the Y setup by using the MENU SEL switch.
   MENU : System config
   PAGE : Y/Chroma (S2)
   ITEM : Y SETUP
   Specifications: C = 53.5 ±2 mV
4. Set the menu as follows, and adjust the Y video by using the MENU SEL switch.
   MENU : System config
   PAGE : Y/Chroma (S2)
   ITEM : Y Video
   Specifications: B = 714 ±7 mV (for NTSC)
   B = 700 ±7 mV (for PAL)



(For NTSC)



(For PAL)

(20 MHz B/W LIMIT → ON)

File Store:

Execute the file store. Press the MENU SEL switch to execute.

MENU : Triming File
PAGE : Triming File (T1)
ITEM : File Store

4-3-3. Test out Adjustment

Equipment : Waveform monitor
Test Point : TEST OUT connector

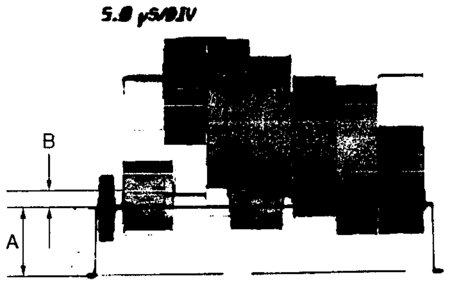
Preparations:

- Connect the waveform monitor to the TEST OUT connector.
- OUTPUT/DCC switch (on the side panel) → BARS
- RGB/ENC switch (on the side panel) → ENC

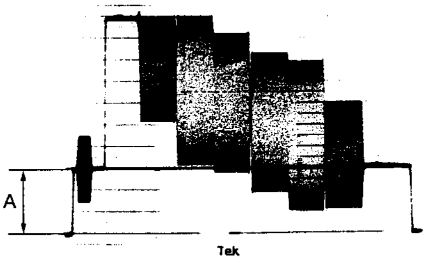
Adjustment Procedures:

1. **Adjustment Point** : ⊘RV101 (VIDEO LEVEL)/
   IF-510 panel
   Specifications : A = 40 ±1 IRE (for NTSC)
   A = 300 ±2 mV (for PAL)

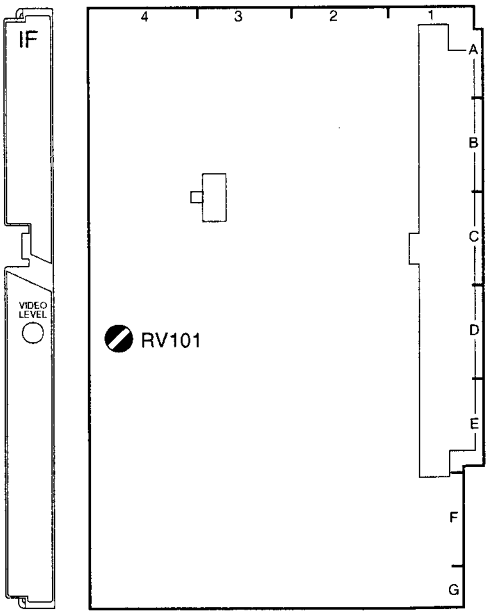
2. (NTSC only)
   Set the menu as follows, and adjust the test setup by using the MENU SEL.
   MENU : System config
   PAGE : Y/Chroma (S2)
   ITEM : TEST SETUP
   Specifications : B = 7.5 ±1 IRE
   File Store:
   Execute the file store. Press the MENU SEL switch to execute.
   MENU : Triming File
   PAGE : Triming File (T1)
   ITEM : File Store



(For NTSC)



(For PAL)



IF-510 BOARD (A SIDE)

4-3-4. Chroma Adjustment

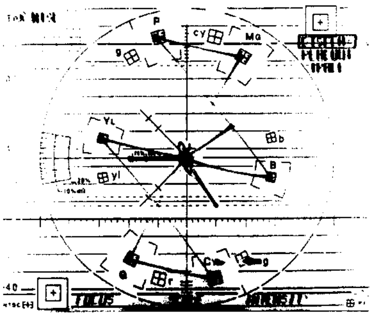
Equipment : Waveform monitor, Vectorscope
Test Point : TEST OUT connector

Preparations:

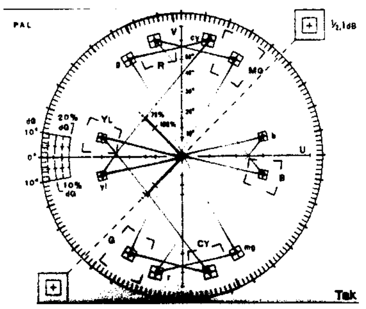
- Connect the vectorscope to the TEST OUT connector.
- OUTPUT/DCC switch (on the side panel) → BARS
- RGB/ENC switch (on the side panel) → ENC

Adjustment Procedures:

1. Set the DISP switch (on the side panel) to MENU while holding down the MENU SEL switch (on the front panel).
2. Set the menu as follows, and adjust the chroma level and Q/V level alternately by using the MENU SEL switch.
   MENU : System config
   PAGE : Y/Chroma (S2)
   ITEM : Chroma LVL
   ITEM : Q/V LVL
   Specifications: Place the beam spots inside the corresponding frames on the vectorscope.

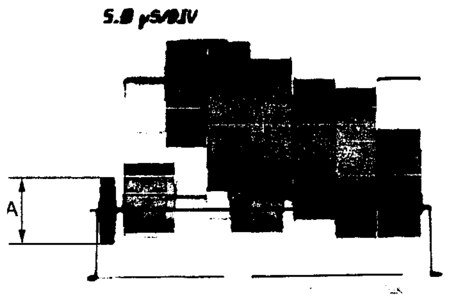


(For NTSC)

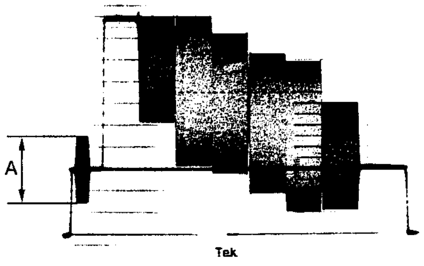


(For PAL)

3. Connect the waveform monitor to the TEST OUT connector.
4. Set the menu as follows, and adjust the burst level by using the MENU SEL switch.
   MENU : System config
   PAGE : Y/Chroma (S2)
   ITEM : Burst LVL
   Specifications: A = 40 ±1 IRE (for NTSC)
   A = 300 ±5 mV (for PAL)



(For NTSC)



(For PAL)

File Store:

Execute the file store. Press the MENU SEL switch to execute.

MENU : Triming File
PAGE : Triming File (T1)
ITEM : File Store

4-3-5. INT SC Phase Adjustment

Notes:

This adjustment precedures are stated below assuming that where the Tektronix 1750 (for NTSC) or1751 (for PAL) is used.
If any other measuring instrument is used, follow the instructions given in the operation manual attached to it.

Equipment : Vectorscope (SC-H Phase measuring mode)
Test Point : TEST OUT connector

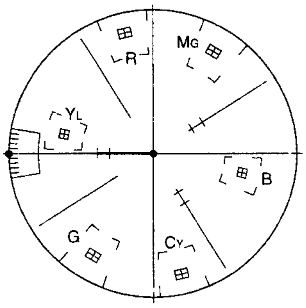
Preparations:

- Connect the vectorscope to the TEST OUT connector.
- OUTPUT/DCC switch (on the side panel) → BARS
- RGB/ENC switch (on the side panel) → ENC

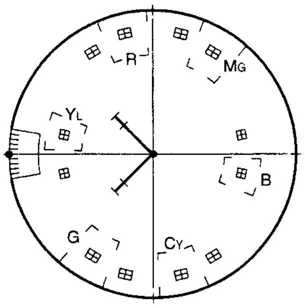
Adjustment Procedures:

1. Set the DISP switch (on the side panel) to MENU while holding down the MENU SEL switch (on the front panel).
2. Set the menu as follows, and adjust the SC-H phase by using the MENU SEL switch.

MENU	: System config
PAGE	: Y/Chroma (S2)
ITEM	: SC-H Phase
Specifications	: Position the luminous line of the burst (SC) and the beam spot of H as shown in the figure.



For NTSC)



(For PAL)

File Store:

Execute the file store. Press the MENU SEL switch to execute.

MENU	: Triming File
PAGE	: Triming File (T1)
ITEM	: File Store

4-3-6. REG Level Adjustment

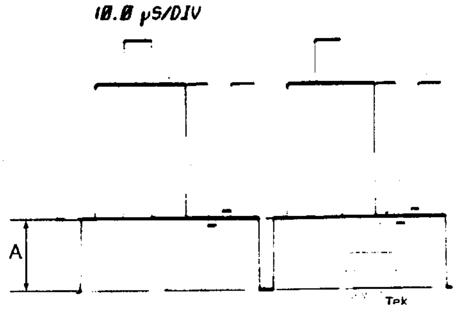
Equipment : Waveform monitor
Test Point : TEST OUT connector

Preparations:

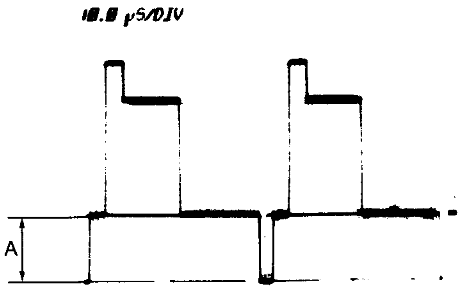
- Connect the waveform monitor to the TEST OUT connector.
- OUTPUT/DCC switch (on the side panel) → BARS
- RGB/ENC switch (on the side panel) → RGB
- R/G/B switch (on the side panel) → G

Adjustment Procedures:

1. Set the DISP switch (on the side panel) to MENU while holding down the MENU SEL switch (on the front panel).
2. Set the menu as follows, and adjust the REG level by using the MENU SEL switch.
   MENU : System config
   PAGE : Y/Chroma (S2)
   ITEM : REG LVL
   Specifications:
   SYNC LEVEL : A = 40 ±1 IRE (for NTSC)
   A = 300 ±2 mV (for PAL)



(For NTSC)



(For PAL)

File Store:

Execute the file store. Press the MENU SEL switch to execute.
MENU : Triming File
PAGE : Triming File (T1)
ITEM : File Store

4-3-7. TEST1 Adjustment

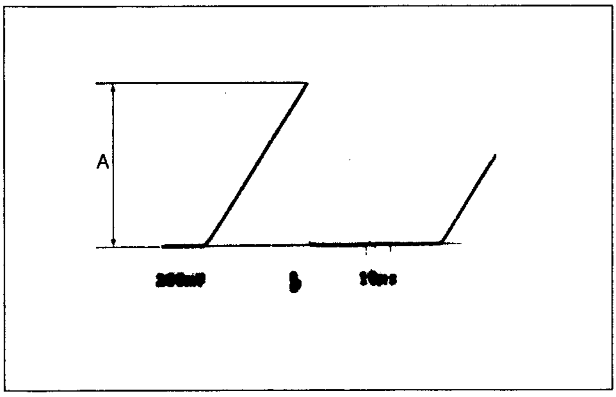
Equipment : Oscilloscope

Preparation:

- Extend VA-163 board with EX-464 board.

Adjustment Procedures:

1. WHITE BAL switch (on the side panel) → PRST
2. Set the DISP switch (on the side panel) to MENU while holding down the MENU SEL switch (on the front panel).
3. Set the menu as follows.
   MENU : System config
   PAGE : PR/VA/TEST (S3)
   ITEM : TEST → 1
4. **Test Point** : TP52 (GND:GND (A))/ Extension board (extending VA-163)
   Adjustment Point : ◐RV50 (TEST)/VA-163 panel
   Specifications : A = 880 ±2 mV



5. Set the menu as follows, and adjust the white level for R by using the MENU SEL switch.
   Test Point : TP54 (GND:GND (A))/ Extension board (extending VA-163)
   Adjustment Point:
   MENU : Paint
   PAGE : Video Level (P1)
   ITEM : White [R]
   Specifications : A = 880 ±40 mV
6. Set the menu as follows, and adjust the white level for B by turning the MENU SEL switch.
   Test Point : TP50 (GND:GND (A))/ Extension board (extending VA-163)
   Adjustment Point:
   MENU : Paint
   PAGE : Video Level (P1)
   ITEM : White [B]
   Specifications : A = 880 ±40 mV

Resetting after Adjustment:

- Set the menu as follows.
  MENU : System config
  PAGE : PR/VA/TEST (S3)
  ITEM : TEST → Off

4-3-8. TEST2 Adjustment

Equipment : Oscilloscope
Test Point : TP52 (GND:GND (A))/
Extension board (extending VA-163)

Preparation:

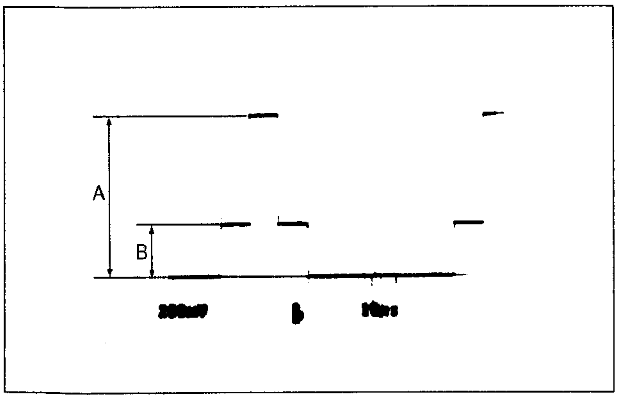
- Extend VA-163 board with EX-464 board.

Adjustment Procedures:

1. Set the DISP switch (on the side panel) to MENU while holding down the MENU SEL switch (on the front panel).
2. Set the menu as follows.
   MENU : System config
   PAGE : PR/VA/TEST (S3)
   ITEM : TEST → 2

3. Set the menu as follows, and adjust the TEST2 high level by using the MENU SEL switch.
   MENU : System config
   PAGE : PR/VA/TEST (S3)
   ITEM : TEST2 HI
   Specifications: A = 880 ±5 mV

4. Set the menu as follows, and adjust the TEST 2 middle level by using the MENU SEL switch.
   MENU : System config
   PAGE : PR/VA/TEST (S3)
   ITEM : TEST2 MID
   Specifications: B = 290 ±5 mV



File Store:

Execute the file store. Press the MENU SEL switch to execute.
MENU : Triming File
PAGE : Triming File (T1)
ITEM : File Store

Resetting after Adjustment:

- Set the menu as follows.
  MENU : System config
  PAGE : PR/VA/TEST (S3)
  ITEM : TEST → Off

4-3-9. A/D Gain Adjustment

Equipment : Waveform monitor
Test Point : TEST OUT connector

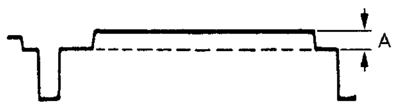
Preparations:

- Connect the waveform monitor to the TEST OUT connector.
- GAIN switch (on the side panel) → L (0 dB)
- RGB/ENC switch (on the side panel) → RGB
- R/G/B switch (on the side panel) → G
- Set the DISP switch (on the side panel) to MENU while holding down the MENU SEL switch (on the front panel). Set the menu as follows.
  MENU : Paint
  PAGE : Detail1 (P2)
  ITEM : Detail → Off
  PAGE : Gamma (P5)
  ITEM : Gamma → On
  PAGE : Knee/W.Clip (P6)
  ITEM : Knee → Off
  ITEM : White Clip → Off

Iris of the lens : CLOSE

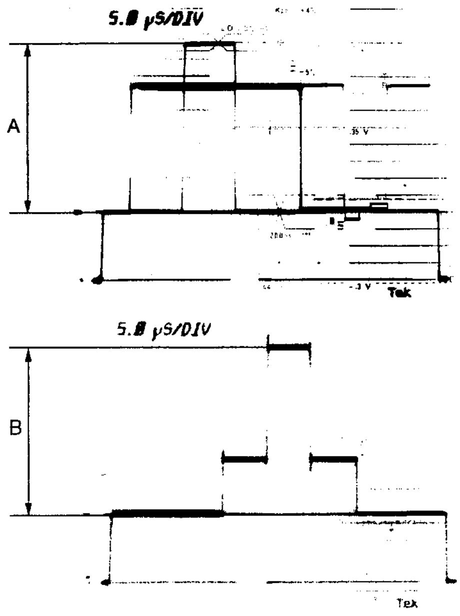
Adjustment Procedures:

1. Set the waveform monitor as follows.
   - LUM mode
2. Set the menu as follows, and adjust the black level by using the MENU SEL switch.
   MENU : Paint
   PAGE : Video Level (P1)
   ITEM : Black [M]
   Specifications: A = 3 ±1 IRE (for NTSC)
   A = 21 ±7 mV (for PAL)

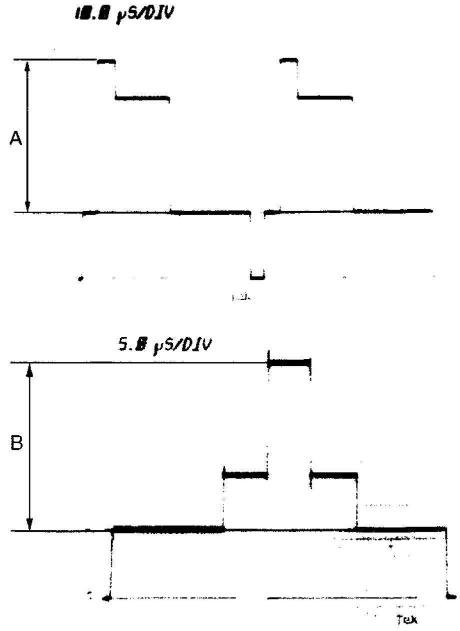


(Waveform Monitor)

3. Adjust the auto black balance.
   AUTO W/B BAL switch (on the front panel) → BLK
4. Set the menu as follows.
   MENU : System config
   PAGE : PR/VA/TEST (S3)
   ITEM : TEST → 2
5. Set the menu as follows, and adjust the A/D gain for G by using the MENU SEL switch.
   MENU : System config
   PAGE : PR/VA/TEST (S3)
   ITEM : PR AD G [G]
   Specifications: The white level shall not be changed even if the OUTPUT/DCC switch (on the side panel) is changed over between CAM and BARS.
   A = B

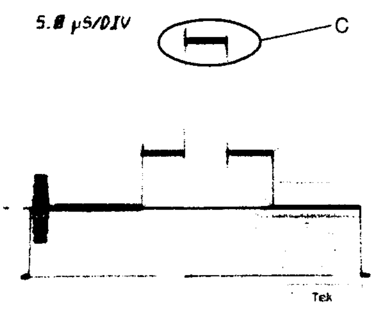


(For NTSC)



(For PAL)

6. Set the R/G/B switch (on the side panel) to ENC.
7. Set the OUTPUT/DCC switch (on the side panel) to CAM/OFF.
8. Set the menu as follows, and adjust the A/D gain for R by using the MENU SEL switch.
   MENU : System config
   PAGE : PR/VA/TEST (S3)
   ITEM : PR AD G [R]
   Specifications: Minimize the carrier leakage.
   C = Minimum
9. Set the menu as follows, and adjust the A/D gain for B by using the MENU SEL switch.
   MENU : System config
   PAGE : PR/VA/TEST (S3)
   ITEM : PR AD G [B]
   Specifications: Minimize the carrier leakage.
   C = Minimum



10. Repeat the steps 8 and 9 alternately until the specifications are satisfied.

File Store:

Execute the file store. Press the MENU SEL switch to execute.

MENU : Triming File
PAGE : Triming File (T1)
ITEM : File Store

Resetting after Adjustment:

- Set the menu as follows.
  MENU : System config
  PAGE : PR/VA/TEST (S3)
  ITEM : TEST → Off

4-3-10. VA Gain Adjustment

Setting of Sensitivity and Standard Color Temperature:

- Use the reflective chart (reflection ratio:89.9%)in this adjustment, if possible.
- If a pattern box is used, it should be well-maintained.
- Set the luminous intensity of the chart to 2000 lx and the color temperature to 3200 K.
- This adjustment shall be performed at F7.0 or more.

Note:

- Never change the setting of the following trimmer capacitors. These capacitors are extremely difficult to adjust in the field.
  VA-163 board :⊘CT200, ⊘CT300, ⊘CT400

Equipment : Oscilloscope, Waveform monitor
Object : Grayscale chart

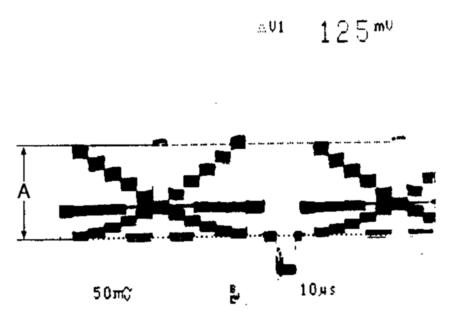
Preparations:

- WHITE BAL switch (on the side panel) → PRST
- GAIN switch (on the side panel) → L (0 dB)
- Extend VA-163 board with EX-464 board.
- RGB/ENC switch (on the side panel) → ENC

Adjustment Procedures:

1. Set the DISP switch (on the side panel) to MENU while holding down the MENU SEL switch (on the front panel).
2. Set the menu as follows.
   MENU : Paint
   PAGE : Knee/W.Clip (P6)
   ITEM : Knee → Off
3. Close the lens iris.
4. Execute the level auto setup.
   Press the MENU SEL switch to execute.
   MENU : Operation
   PAGE : Auto Setup
   ITEM : Level Auto
5. Confirm the black level is 3 IRE for NTSC and 21 mV for PAL at the TEST OUT connector.
   If the black level is out of specs, carry out "4-3-14. Master Black Adjustment".

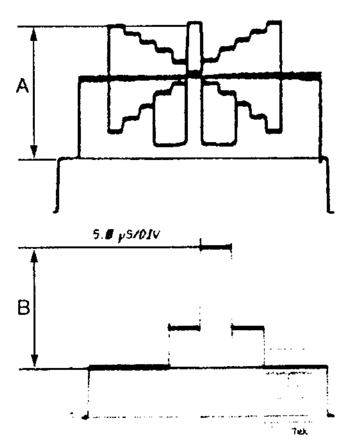
6. **Test Point** : TP72 (GND:TP71)/extension board (extending VA-163)
   Iris of the lens: A = 125 mV (at F7.0 or more)



(Oscilloscope)

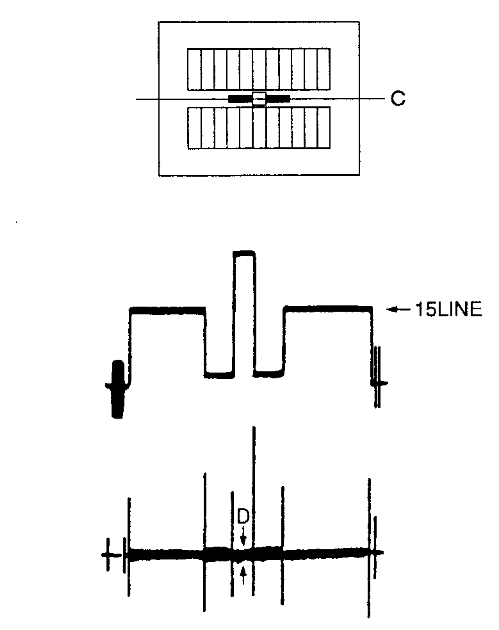
7. Set the RGB/ENC switch (on the side panel) to RGB. Set the R/G/B switch (on the side panel) to G.
8. Adjust the VA gain for G.
   Test Point : TEST OUT connector
   Adjustment Point : ⊘RV300 (G GAIN)/VA-163 panel
   Specifications : The levels A and B are shall be equal when the test waveform is switched between 2 and off.

   Menu Setting:
   MENU : Paint
   PAGE : Knee/W.Clip (P6)
   ITEM : Test

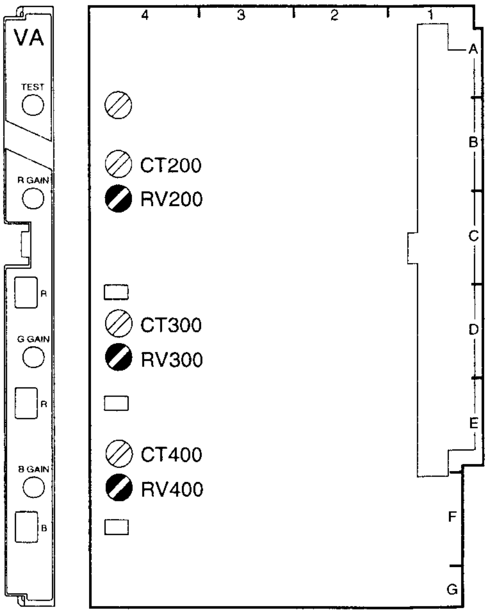


(Waveform Monitor)

9. Set the menu as follows.
   MENU : Paint
   PAGE : Knee/W.Clip (P6)
   ITEM : Test → Off
10. Select the 15 lines in the center of monitor screen C by using the 15 LINE SELECT on the waveform monitor.
11. Put the waveform monitor into the CHROMA mode.
12. Set the RGB/ENC switch (on the side panel) to ENC.
13. **Test Point** : TEST OUT connector
    Adjustment Point : ⊘RV200 (R GAIN)/VA-163 panel
    ⊘RV400 (B GAIN)/VA-163 panel
    Specifications : Carrier leakage D = Minimum



(Waveform Monitor)



VA-163 BOARD (A SIDE)

4-3-11. VA MOD Adjustment

Equipment : Waveform monitor
Test Point : TEST OUT connector

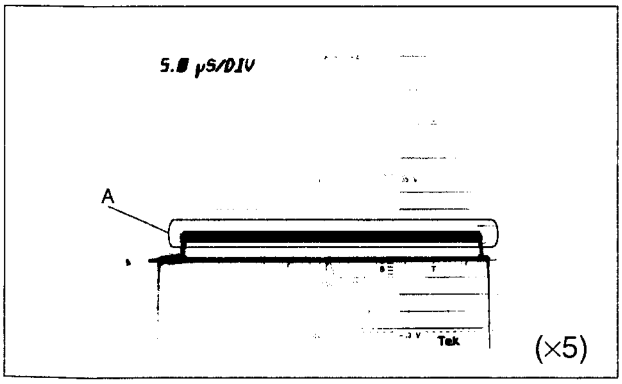
Preparations:

- Connect the waveform monitor to the TEST OUT connector.
- GAIN switch (on the side panel) → L (0 dB)
- RGB/ENC switch (on the side panel) → RGB
- R/G/B switch (on the side panel) → R

Iris of the lens : CLOSE

Adjustment Procedures:

1. Set the waveform monitor as follows.
   - LUM mode
2. Set the menu as follows, and adjust the V MOD for R by using the MENU SEL switch.
   MENU setting:
   MENU : Maintenance
   PAGE : White Shading (M2)
   ITEM : H Saw [R] → 99
   Adjustment Point:
   MENU : System config
   PAGE : PR/VA/TEST (S3)
   ITEM : VA MOD [R]
   Specifications: Flatten the portion A.
   Adjust so that the level at portion A does not fluctuate even if the setting value for H Saw [R] varies from 99 to –99.



3. Set the R/G/B switch (on the side panel) to G.
4. Set the menu as follows, and adjust the V MOD for G by using the MENU SEL switch.
   MENU setting:
   MENU : Maintenance
   PAGE : White Shading (M2)
   ITEM : H Saw [G] → 99
   Adjustment Point:
   MENU : System config
   PAGE : PR/VA/TEST (S3)
   ITEM : VA MOD [G]
   Specifications: Flatten the portion A.
   Adjust so that the level at portion A does not fluctuate even if the setting value for H Saw [G] varies from 99 to –99.

5. Set the R/G/B switch (on the side panel) to B.
6. Set the menu as follows, and adjust the V MOD for R by using the MENU SEL switch.
   MENU setting:
   MENU : Maintenance
   PAGE : White Shading (M2)
   ITEM : H Saw [B] → 99
   Adjustment Point:
   MENU : System config
   PAGE : PR/VA/TEST (S3)
   ITEM : VA MOD [B]
   Specifications: Flatten the portion A.
   Adjust so that the level at portion A does not fluctuate even if the setting value for H Saw [B] varies from 99 to –99.

File Store:

Execute the file store. Press the MENU SEL switch to execute.

MENU : Triming File
PAGE : Triming File (T1)
ITEM : File Store

Resetting after Adjustment:

- Set the menu as follows. Press the MENU SEL switch to execute.
  MENU : Maintenance
  PAGE : White Shading (M2)
  ITEM : Clear

4-3-12. Black Shading Adjustment

Notes:

- The compensation data obtained by the black shading adjustment is not stored in the OHB File. Therefore, when the OHB is replaced or a new OHB is installed, be sure to perform this adjustment.
- If the shading adjustment is not completed, perform the adjustment again referring to the message displayed on the viewfinder or MSU.
  If the re-adjustment still is not completed, consult Sony service representative.

Preparations:

- Connect the waveform monitor to the TEST OUT connector.
- RGB/ENC switch (on the side panel) → ENC

Test Point : TEST OUT connector
Iris of the lens: CLOSE

Adjustment Procedures:

1. Set the DISP switch (on the side panel) to MENU while holding down the MENU SEL switch (on the front panel).
2. Set the menu as follows and execute the auto black shading. Press the MENU SEL switch to execute.
   MENU : Maintenance
   PAGE : Auto Setup(M4)
   ITEM : Black Shading
3. Confirm the "OK" is displayed on the viewfinder or MSU. If the error message is displayed, perform the adjustment again referring to this message.

Message and its meaning

BLACK:OK	: Adjustment correctly completed.
LEVEL TOO HIGH	: Lens closing does not operate fully, and so on.
TIME LIMIT	: Black shading adjustment could not be completed within the specified number of attempts.
OVER FLOW	: The difference between the reference value and the current value is too great, and exceeds adjustment range. Adjustment is then not completed.

4. Confirm the carrier level satisfies the specification on the waveform monitor.
   Specifications: Less than 2 IRE (for NTSC)
   Less than 14 mV (for PAL)

• Manual Black Shading Adjustment (For reference)

Note:

- Perform this adjustment only when "4-4-12. Black Shading Adjustment" is not completed.

Equipment : Waveform monitor

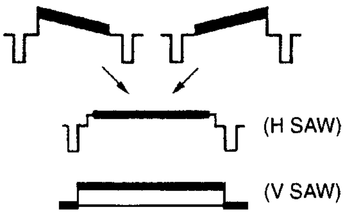
Preparations:

- Connect the waveform monitor to the TEST OUT connector.
- GAIN switch (on the side panel) → H (18 dB)

Test Point : TEST OUT connector
Iris of the lens : CLOSE

Adjustment Procedures:

1. Set the waveform monitor as follows.
   - LUM mode
   - VOLTFULL SCALE range → 0.5
2. Set the ENC/RGB switch (on the side panel) to RGB. Set the R/G/B switch (on the side panel) to G.
3. Set the DISP switch (on the side panel) to MENU while holding down the MENU SEL switch (on the front panel).
4. Set the menu as follows, and adjust the master black level to 3 IRE for NTSC and 21 mV for PAL by using the MENU SEL switch.
   MENU : Maintenance
   PAGE : Black Shading (M3)
   ITEM : Black M
5. If the shading is monitored, make the waveform flat referring to the following table.
6. Perform the adjustments for R-ch and B-ch with the same procedures as for G-ch.

	Switch	**H SAW** **PAGE:** **Black Shading (M3)**	**V SAW** **PAGE:** **Black Shading (M3)**
R	ENC/RGB → RGB R/G/B → R	ITEM: H Saw (R)	ITEM: V Saw (R)
G	ENC/RGB → RGB R/G/B → G	ITEM: H Saw (G)	ITEM: V Saw (G)
B	ENC/RGB → RGB R/G/B → B	ITEM: H Saw (B)	ITEM: V Saw (B)
TEST OUT connector			

File Store:

Execute the file store. Press the MENU SEL switch to execute.

MENU : Reference File
PAGE : Reference File (R1)
ITEM : File Store

Resetting after Adjustment:

- ENC/RGB switch (on the side panel) → ENC
- GAIN switch (on the side panel) → L (0 dB)

4-3-13. White Shading Adjustment

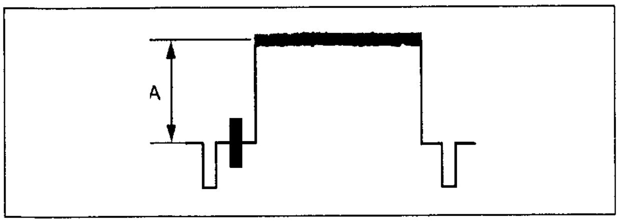
Note:

- This adjustment could not be correctly performed if the uneven white patten is used, luminance is not correct, or lens iris and lens zoom are not in good conditions.

Equipment : Waveform monitor
Test Point : TEST OUT connector
Object : Full white pattern

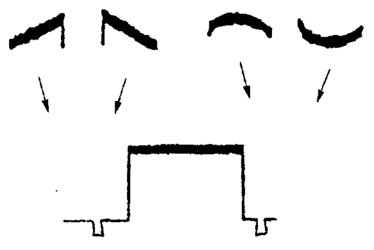
Preparations:

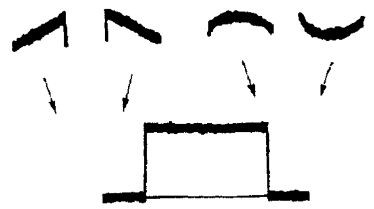
- Connect the waveform monitor to the TEST OUT connector.
- ENC/RGB switch (on the side panel) → ENC
- Set the DISP switch (on the side panel) to MENU while holding down the MENU SEL switch (on the front panel). Set the menu as follows.
  MENU : Paint
  PAGE : Knee/W.Clip (P6)
  ITEM : Knee → Off
- Shoot the fully occupied white area of the pattern box in the full underscanned monitor frame adjusting the zoom control.
  Iris of the lens : A = 80 ±5 IRE (for NTSC)
  A = 560 ±35 mV (for PAL)



Adjustment Procedures:

1. Set the WHITE BAL switch (on the side panel) to PRST.
2. Set the waveform monitor as follows.
   - LUM mode
   - VOLTFULL SCAN range → 0.5
3. Set the ENC/RGB switch (on the side panel) to RGB. Set the R/G/B switch (on the side panel) to G.
4. If the white shading is monitored, make the waveform flat referring to the following tables.
5. Perform the adjustments for R-ch and B-ch with the same procedures as for G-ch.

	Switch	H SAW PAGE: White Shading (M2)	H PARA PAGE: White Shading (M2)
R	ENC/RGB → RGB R/G/B → R	ITEM: H Saw (R)	ITEM: H Para (R)
G	ENC/RGB → RGB R/G/B → G	ITEM: H Saw (G)	ITEM: H Para (G)
B	ENC/RGB → RGB R/G/B → B	ITEM: H Saw (B)	ITEM: H Para (B)
TEST OUT connector			

	Switch	V SAW PAGE: White Shading (M2)	V PARA PAGE: White Shading (M2)
R	ENC/RGB → RGB R/G/B → R	ITEM: V Saw (R)	ITEM: V Para (R)
G	ENC/RGB → RGB R/G/B → G	ITEM: V Saw (G)	ITEM: V Para (G)
B	ENC/RGB → RGB R/G/B → B	ITEM: V Saw (B)	ITEM: V Para (B)
TEST OUT connector			

File Store:

Execute the file store. Press the MENU SEL switch to execute.

MENU : Reference File
PAGE : Reference File (R1)
ITEM : File Store

Resetting after Adjustment:

- ENC/RGB switch (on the side panel) → ENC

4-3-14. Master Black Adjustment

Equipment : Waveform monitor
Test Point : TEST OUT connector

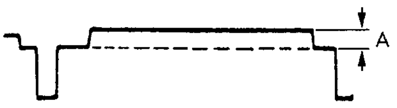
Preparations:

- Connect the waveform monitor to the TEST OUT connector.
- RGB/ENC switch (on the side panel) → RGB
- R/G/B switch (on the side panel) → G

Iris of the lens: CLOSE

Adjustment Procedures:

1. Set the waveform monitor as follows.
   - LUM mode
2. Set the DISP switch (on the side panel) to MENU while holding down the MENU SEL switch (on the front panel).
3. Set the menu as follows, and adjust the black level by using the MENU SEL switch.
   MENU : Paint
   PAGE : Video Level (P1)
   ITEM : Black [M]
   Specifications: A = 3 ±1 IRE (for NTSC)
   A = 21 ±7 mV (for PAL)



(Waveform Monitor)

3. Set the RGB/ENC switch (on the side panel) to ENC.
4. Adjust the auto black balance.
   AUTO W/B BAL switch (on the front panel) → BLK

File Store:

Execute the file store. Press the MENU SEL switch to execute.

MENU : Reference File
PAGE : Reference File (R1)
ITEM : File Store

4-3-15. Gamma Correction Adjustment

Equipment : Waveform monitor, Vectorscope
Test Point : TEST OUT connector
Object : Grayscale chart

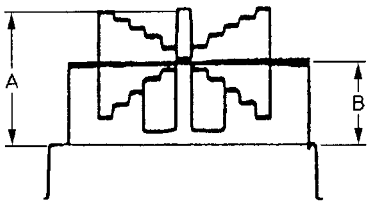
Preparations:

- Connect the waveform monitor to the TEST OUT connector.
- Connect the vectorscope to the PIX OUT terminal on the waveform monitor.
- Shoot the grayscale chart so that the chart frame is aligned with the underscanned monitor frame.
- RGB/ENC switch (on the side panel) → ENC
- Set the DISP switch (on the side panel) to MENU while holding down the MENU SEL switch (on the front panel). Set the menu as follows.
  MENU : Paint
  PAGE : Gamma (P5)
  ITEM : Gamma → On
  PAGE : Knee/W.Clip (P6)
  ITEM : Knee → Off

Iris of the lens : A = 100 ±2 IRE (for NTSC)
A = 700 ±14 mV (for PAL)

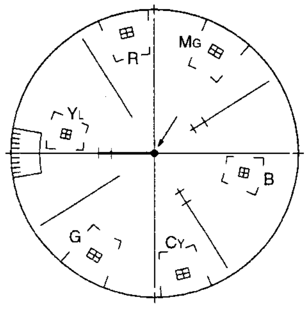
Adjustment Procedures:

1. Set the RGB/ENC switch (on the side panel) to RGB.
   Set the R/G/B switch (on the side panel) to G.
2. Set the menu as follows, and adjust the gamma correction for (M) by using the MENU SEL switch.
   PAGE : Video Level (P1)
   ITEM : Gamma [M]
   Specifications: B = 55.5 ±2.0 IRE (for NTSC)
   B = 420 ±14 mV (for PAL)

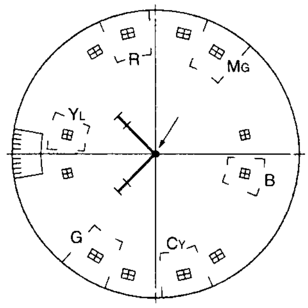


(Waveform Monitor)

3. Set the menu as follows.
   MENU : Paint
   PAGE : Video Level (P1)
   ITEM : Test → 1
4. Set the RGB/ENC switch (on the side panel) to ENC.
5. Adjust the auto white balance.
   WHT BAL switch (on the side panel) → A
   AUTO W/B BAL switch (on the front panl) → WHT
6. Set the menu as follows, and adjust the gamma correction for (R) by using the MENU SEL switch.
   MENU : Paint
   PAGE : Video Level (P1)
   ITEM : Gamma [R]
   Specifications: Center the beam spot on the vectorscope.
7. Set the menu as follows, and adjust the gamma correction for (B) by using the MENU SEL switch.
   MENU : Paint
   PAGE : Video Level (P1)
   ITEM : Gamma [B]
   Specifications: Center the beam spot on the vectorscope.
8. Repeat the steps 6 and 7 alternately, until the beam spot is minimized on the vectorscope.

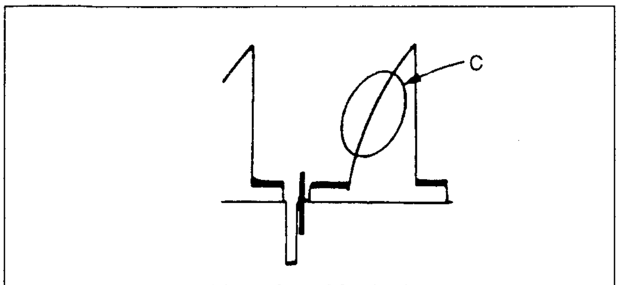


(For NTSC)



(For PAL)
(Vectorscope)

9. Confirm that the carrier leakage does not monitored at portion C on the waveform monitor.
   Specifications: C = Minimum



(Waveform Monitor)

File Store:

Execute the file store. Press the MENU SEL switch to execute.

MENU : Reference File
PAGE : Reference File (R1)
ITEM : File Store

Resetting after Adjustment:

- Set the menu as follows.
  MENU : Paint
  PAGE : Video Level (P1)
  ITEM : Test → Off
- WHITE BAL switch (on the side panel) → PRST

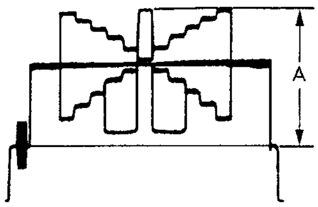
4-3-16. Flare Adjustment

Equipment : Waveform monitor
Test Point : TEST OUT connector
Object : Grayscale chart

Preparations:

- Connect the waveform monitor to the TEST OUT connector.
- Shoot the grayscale chart so that the chart frame is aligned with the underscanned monitor frame.
- RGB/ENC switch (on the side panel) → ENC
- Set the DISP switch (on the side panel) to MENU while holding down the MENU SEL switch (on the front panel). Set the menu as follows.
  MENU : Paint
  PAGE : Knee/W.Clip (P6)
  ITEM : Knee → Off

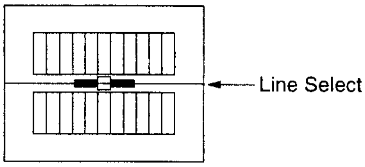
Iris of the lens : A = 100 ±2 IRE (for NTSC)
A = 700 ±14 mV (for PAL)



(Waveform Monitor)

Adjustment Procedures:

1. Adjust the auto white balance.
   WHITE BAL switch (on the side panel) → A
   AUTO W/B BAL switch (on the front panel) → WHT
2. Open the iris control of the lens by two stops against the reference setup (corresponding above A).
3. Set the RGB/ENC switch (on the side panel) to ENC.
   Set the R/G/B switch (on the side panel) to G.
4. Select the 15 lines in the center of the monitor screen by using the 15 LINESELECT on the waveform monitor.



5. Confirm that the level at portion B does not fluctuate even if the flare turns On/Off. If fluctuates, turn Flare ON and adjust by Flare (G).

   Menu Setting:

   MENU : Paint
   PAGE : Video Level (P1)
   ITEM : Flare → On/Off

   Adjustment Point:

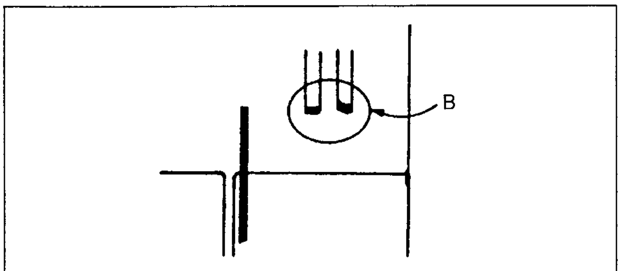
   ITEM : Flare [G]
6. Set the ENC/RGB switch (on the side panel) to ENC.
7. Set the menu as follows, and adjust the flare for R by using the MENU SEL switch.

   MENU : Paint
   PAGE : Video Level (P1)
   ITEM : Flare [R]

   Specifications: Minimize the carrier leakage.
8. Set the menu as follows, and adjust the flare for B by using the MENU SEL switch.

   MENU : Paint
   PAGE : Video Level (P1)
   ITEM : Flare [B]

   Specifications: Minimize the carrier leakage.



(Waveform Monitor)

9. Repeat the steps 7 and 8 alternately, until the carrier leakage is minimized.

File Store:

Execute the file store. Press the MENU SEL switch to execute.

MENU : Reference File
PAGE : Reference File (R1)
ITEM : File Store

Resetting after Adjustment:

- WHITE BAL switch (on the side panel) → PRST

4-3-17. Pre Knee Adjustment

Equipment : Oscilloscope, Waveform monitor

Preparation:

- Extend VA-163 board with EX-464 board.

Iris of the lens : CLOSE

Adjustment Procedures:

1. Set the DISP switch (on the side panel) to MENU while holding down the MENU SEL switch (on the front panel).
2. Set the menu as follows.

   MENU : Paint
   PAGE : Knee/W.Clip (P6)
   ITEM : Knee → On
3. Set the RGB/ENC switch (on the side panel) to ENC.
4. Set the GAIN switch (on the side panel) to M (9 dB).
5. Set the WHITE BAL switch (on the side panel) to PRST.
6. Set the menu as follows.

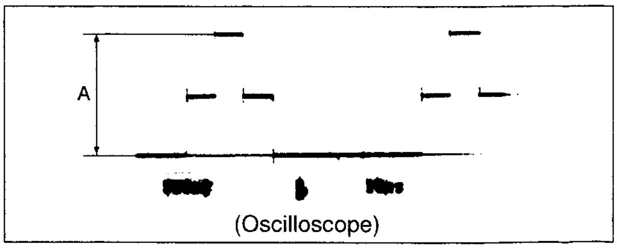
   MENU : System config
   PAGE : Pre Knee/Zebra (S4)
   ITEM : Test → 2
7. Set the menu as follows, and adjust the pre knee 1 for G by using the MENU SEL switch.

   Test Point : TP52 (GND:GND (A))/
   Extension board (extending VA-163)

   Adjustment Point:

   MENU : System config
   PAGE : Pre Knee/Zebra (S4)
   ITEM : PreKnee1[G]

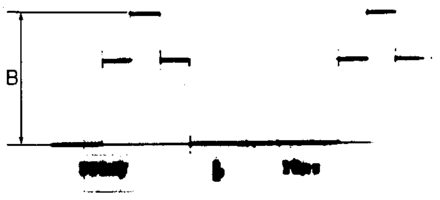
   Specifications: A = 1.68 ±0.02 V p-p



(Oscilloscope)

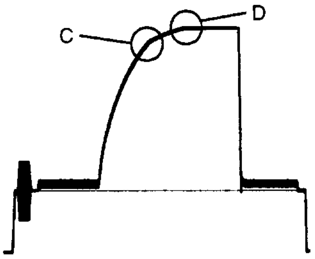
8. Set the menu as follows.
MENU : Operation
PAGE : Gain SW (?3)
ITEM : Middle → 12 dB

9. Set the menu as follows, and adjust the pre knee 2 for G by using the MENU SEL switch.
Test Point : TP52 (GND:GND (A))/ Extension board (extending VA-163)
Adjustment Point:
MENU : System config
PAGE : Pre Knee/Zebra (S4)
ITEM : PreKnee2[G]
Specifications: B = 1.80 ±0.02 V p-p



(Oscilloscope)

10. Set the menu as follows.
MENU : System config
PAGE : Pre Knee/Zebra (S4)
ITEM : Test → 1
11. Set the GAIN switch (on the side panel) to H (18dB). Set the OUTPUT/DCC switch (on the side panel) to CAM/ON.
12. Set the menu as follows, and adjust the pre knee 1 for R by using the MENU SEL switch.
Test Point : TEST OUT connector
Adjustment Point:
MENU : System config
PAGE : Pre Knee/Zebra (S4)
ITEM : PreKnee1[R]
Specifications: Minimize the carrier leakage C.
13. Set the menu as follows, and adjust the pre knee 1 for B by using the MENU SEL switch.
Test Point : TEST OUT connector
Adjustment Point:
MENU : System config
PAGE : Pre Knee/Zebra (S4)
ITEM : PreKnee1[B]
Specifications: Minimize the carrier leakage C.
14. Set the menu as follows, and adjust the pre knee 2 for R by using the MENU SEL switch.
Test Point : TEST OUT connector
Adjustment Point:
MENU : System config
PAGE : Pre Knee/Zebra (S4)
ITEM : PreKnee2[R]
Specifications: Minimize the carrier leakage D.
15. Set the menu as follows, and adjust the pre knee 2 for B by using the MENU SEL switch.
Test Point : TEST OUT connector
Adjustment Point:
MENU : System config
PAGE : Pre Knee/Zebra (S4)
ITEM : PreKnee2[B]
Specifications: Minimize the carrier leakage D.



(Waveform Monitor)

File Store:

Execute the file store. Press the MENU SEL switch to execute.
MENU : Triming File
PAGE : Triming File (T1)
ITEM : File Store

Resetting after Adjustment:

- Set the menu as follows.
  MENU : Operation
  PAGE : Gain SW (?3)
  ITEM : Middle → 9 dB
  MENU : System config
  PAGE : Pre Knee/Zebra (S4)
  ITEM : Test → Off
- GAIN switch (on the side panel) → L (0 dB)

4-3-18. Knee and White Clip Adjustment

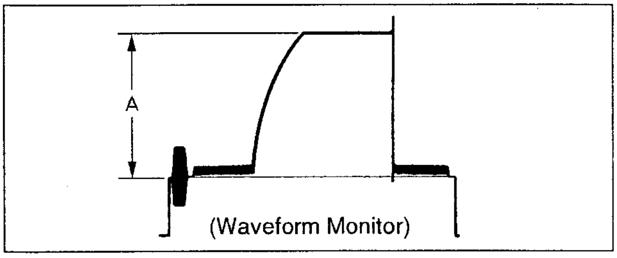
Equipment : Waveform monitor
Test Point : TEST OUT connector

Preparations:

- Connect the waveform monitor to the TEST OUT connector.
- OUTPUT/DCC switch (on the side panel) → CAM/OFF
- RGB/ENC switch (on the side panel) → ENC
- WHITE BAL switch (on the side panel) → PRST
- GAIN switch (on the side panel) → M(9 dB)

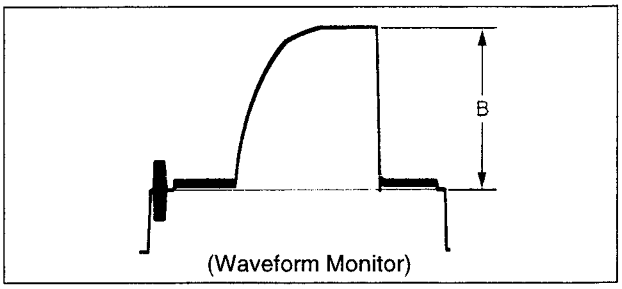
Adjustment Procedures:

1. Confirm the black level is 3 IRE for NTSC and 21 mV for PAL.
2. Set the DISP switch (on the side panel) to MENU while holding down the MENU SEL switch (on the front panel).
3. Set the menu as follows, and adjust the knee point level by using the MENU SEL switch.
   MENU : Paint
   PAGE : Knee/W.Clip (P6)
   ITEM : Test → 1
   ITEM : White Clip → Off
   ITEM : Knee → On
   ITEM : Knee Max → On
   Adjustment Point:
   ITEM : Point
   Specifications: A = 98 ±2 IRE (for NTSC)
   A = 686 ±10 mV (for PAL)



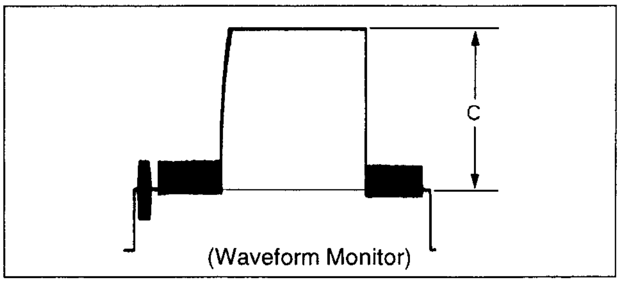
(Waveform Monitor)

4. Set the menu as follows, and adjust the knee slope level by using the MENU SEL switch.
   MENU : Paint
   PAGE : Knee/W.Clip (P6)
   ITEM : Knee Max → Off
   Adjustment Point:
   ITEM : Slope
   Specifications: B = 109 ±2 IRE (for NTSC)
   B = 763 ±10 mV (for PAL)



(Waveform Monitor)

5. Set the GAIN switch (on the side panel) to H (18 dB).
6. Set the menu as follows, and adjust the white clip level by using the MENU SEL switch.
   MENU : Paint
   PAGE : Knee/W.Clip (P6)
   ITEM : White Clip → On
   Adjustment Point:
   ITEM : White Clip
   Specifications: C = 109 ±2 IRE (for NTSC)
   C = 750 ±10 mV (for PAL)



(Waveform Monitor)

Resetting after Adjustment:

- Set the menu as follows.
  MENU : Paint
  PAGE : Knee/W.Clip (P6)
  ITEM : Test → Off
- GAIN switch (on the side panel) → L (0 dB).

File Store:

Execute the file store. Press the MENU SEL switch to execute.

MENU : Reference File
PAGE : Reference File (R1)
ITEM : File Store

Note:

The values used in the above adjustments are under the conditions that the white clip level is set to 109 IRE (for NTSC) or 763 mV (for PAL).
When the white clip level is set to other value than 109 IRE or 763 mV, use the following table to set the levels of the knee point and knee slope.

	White Clip Level (Unit: IRE/mV)			
	109/763	107/749	105/735	103/721
Knee point	98/686	98/686	96/672	96/672
Knee slope	109/763	109/763	107/750	107/750
White clip	109/763	107/749	105/735	103/721

4-3-19. A/D Clock Phase Adjustment

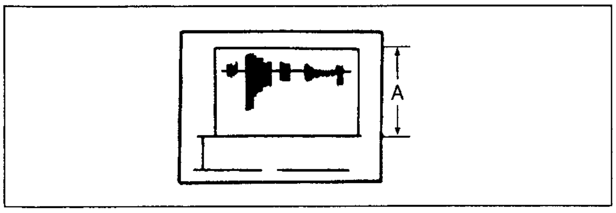
Equipment : Waveform monitor
Test Point : TEST OUT connector
Object : Multiburst chart

Preparations:

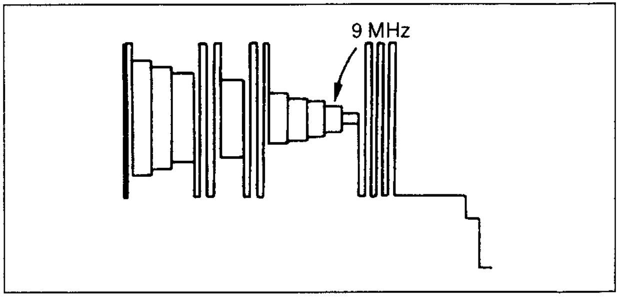
- Connect the waveform monitor to the TEST OUT connector.
- Shoot the multiburst chart so that the chart frame is aligned with the underscanned monitor frame with the zoom control.
- Pan so that the 9 MHz portion of the multiburst chart is positioned at the center of the monitor screen.
- OUTPUT/DCC switch (on the side panel) → CAM/OFF
- RGB/ENC switch (on the side panel) → ENC
- Set the DISP switch (on the side panel) to MENU while holding down the MENU SEL switch (on the front panel). Set the menu as follows.
  MENU : Paint
  PAGE : Knee/W.Clip (P6)
  ITEM : Auto Knee → On

Adjustment Procedures:

1. **Iris of the lens**: A = 90 ± 2 IRE (for NTSC)
   A = 630 ± 10 mV (for PAL)



2. Set the menu as follows, and adjust the clock phase for G by using the MENU SEL switch.
   MENU : System config
   PAGE : PR/VA/TEST (S3)
   ITEM : G Clock
   Specifications: Maximize the 9 MHz signal portion.
3. Set the menu as follows, and adjust the clock phase for R/B by using the MENU SEL switch.
   MENU : System config
   PAGE : PR/VA/TEST (S3)
   ITEM : R/B Clock
   Specifications: Minimize the aliasing around the 9 MHz signal portion.



File Store:

Execute the file store. Press the MENU SEL switch to execute.

MENU : Triming File
PAGE : Triming File (T1)
ITEM : File Store

4-3-20. VTR R-Y/B-Y Adjustment

Equipment : Oscilloscope

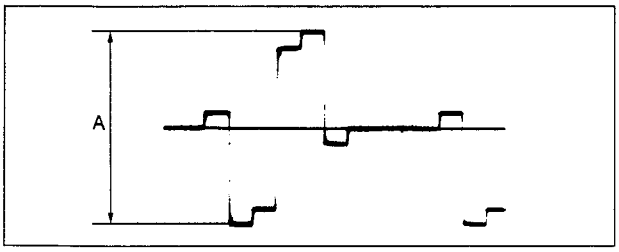
Preparation:

- OUTPUT/DCC switch (on the side panel) → BARS

Adjustment Procedures:

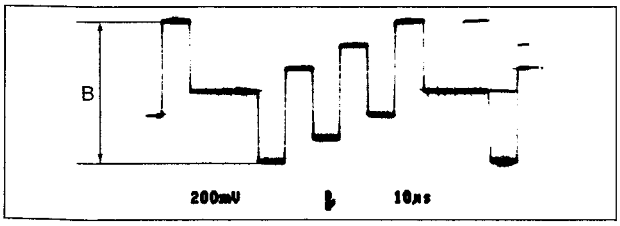
1. Set the DISP switch (on the side panel) to MENU while holding down the MENU SEL switch (on the front panel).
2. Set the menu as follows, and adjust the VTR R-Y by using the MENU SEL switch.

Test Point : TP4 (R-Y) (GND:E1)/DA-88 panel
Adjustment Point:
MENU : System config
PAGE : VTR/CCU (S5)
ITEM : VTR R-Y
Specifications: A = 700 ±5 mV (for NTSC)
: A = 525 ±5 mV (for PAL)



3. Set the menu as follows, and adjust the VTR B-Y by using the MENU SEL switch.

Test Point : TP5 (B-Y) (GND:E1)/DA-88 panel
Adjustment Point:
MENU : System config
PAGE : VTR/CCU (S5)
ITEM : VTR B-Y
Specifications: B = 700 ±5 mV (for NTSC)
: B = 525 ±5 mV (for PAL)



File Store:

Execute the file store. Press the MENU SEL switch to execute.

MENU : Triming File
PAGE : Triming File (T1)
ITEM : File Store

4-3-21. CCU Y/R-Y/B-Y Adjustment

Equipment : Oscilloscope

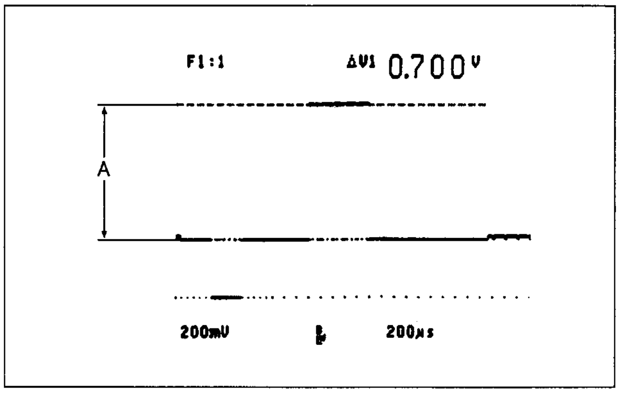
Preparation:

- Connect the CCU to the camera.

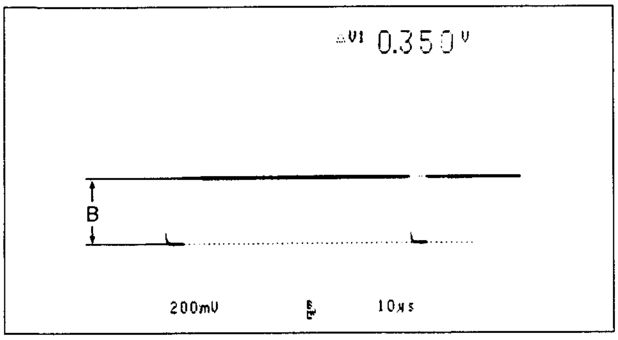
Adjustment Procedures:

1. Set the DISP switch (on the side panel) to MENU while holding down the MENU SEL switch (on the front panel).
2. Set the menu as follows, and adjust the CCU Y sample by using the MENU SEL switch.

Test Point : TP3 (Y) (GND:E1)/DA-88 panel
Adjustment Point:
MENU : System config
PAGE : VTR/CCU (S5)
ITEM : CCU Y SAMP
Specifications: A = 700 ±2 mV

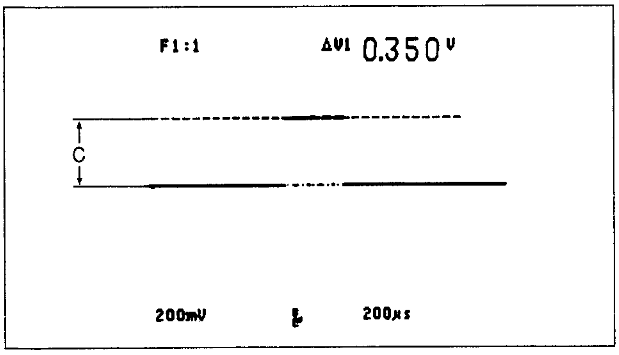


3. Set the menu as follows, and adjust the CCU R-Y sync by using the MENU SEL switch.
   Test Point : TP4 (R-Y) (GND:E1)/DA-88 panel
   Adjustment Point:
   MENU : System config
   PAGE : VTR/CCU (S5)
   ITEM : CCU R-Y SYNC
   Specifications: B = 350 ±2 mV



4. Set the menu as follows, and adjust the CCU B-Y by using the MENU SEL switch.
   Test Point : TP5 (B-Y) (GND:E1)/DA-88 panel

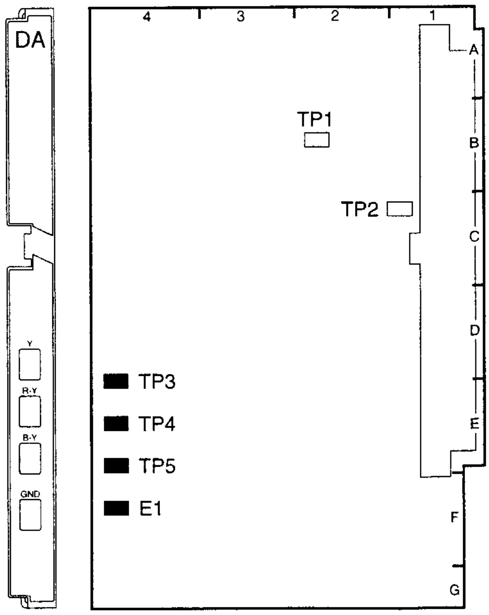
6. **Adjustment Point**:
   MENU : System config
   PAGE : VTR/CCU (S5)
   ITEM : CCU B-Y SAMP
   Specifications: C = 350 ±2 mV



File Store:

Execute the file store. Press the MENU SEL switch to execute.

MENU : Triming File
PAGE : Triming File (T1)
ITEM : File Store



DA-88 BOARD (A SIDE)

4-3-22. RGB Adjustment

Equipment : Oscilloscope

Preparations:

- Extend IF-510 board with EX-464 board.
- Set the DISP switch (on the side panel) to MENU while holding down the MENU SEL switch (on the front panel). Set the menu as follows.

  MENU : System config
  PAGE : VTR/CCU (S5)
  ITEM : CB → On

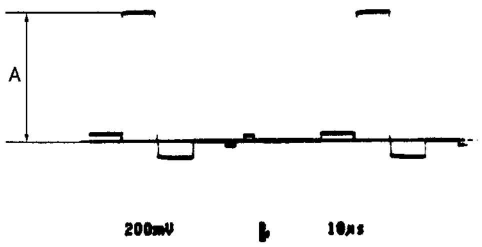
Adjustment Procedures:

1. Set the menu as follows, and adjust the G video level by using the MENU SEL switch.

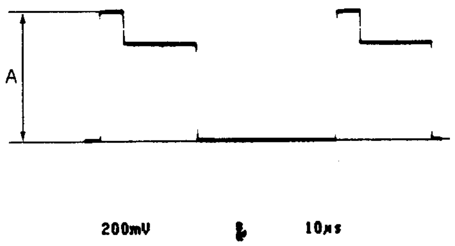
   Test Point : TP61 (GND:GND (A))/
   Extension board (extending IF-510)

   Adjustment Point:
   MENU : System config
   PAGE : VTR/CCU (S5)
   ITEM : RGB OFFSET

   Specifications: A = 700 ±5 mV



(For NTSC)

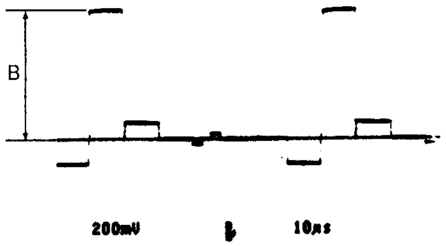


(For PAL)

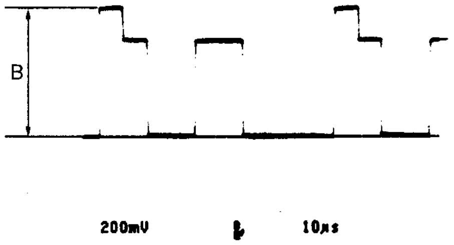
2. Confirm the R video level.

   Test Point : TP63 (GND:GND (A))/
   Extension board (extending IF-510)

   Specifications:B = 700 ±7 mV

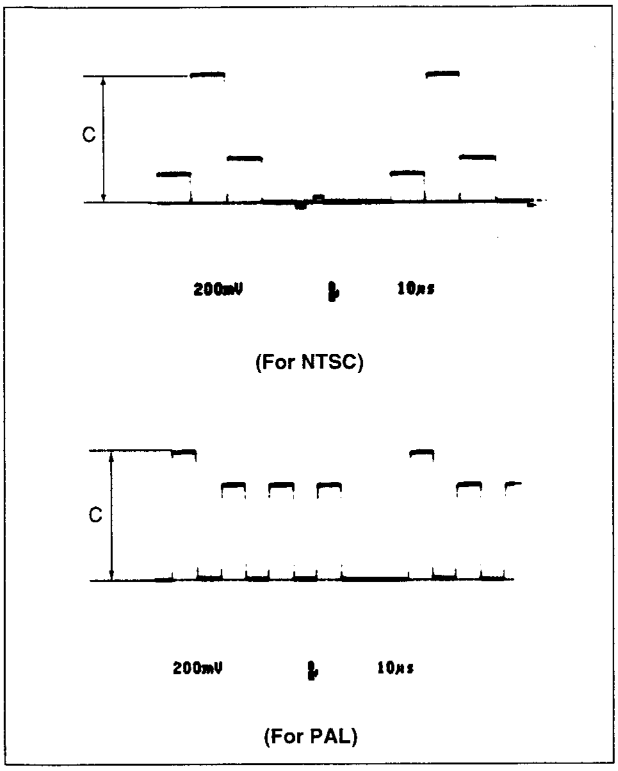


(For NTSC)



(For PAL)

3. Confirm the B video level.
   Test Point : TP59 (GND:GND (A))/
   Extension board (extending IF-510)
   Specifications: C = 700 ±7 mV



(For NTSC)

(For PAL)

File Store:

Execute the file store. Press the MENU SEL switch to execute.

MENU : Triming File
PAGE : Triming File (T1)
ITEM : File Store

4-3-23. Menu Setting After Finishing Adjustment

MENU : Paint
PAGE : Detail1 (P2)
ITEM : Detail → On
PAGE : Gamma (P5)
ITEM : Gamma → On
PAGE : Knee/W.Clip (P6)
ITEM : Knee → On
MENU : System config
PAGE : VTR/CCU (S5)
ITEM : CB→Off
MENU : Reference File
PAGE : Reference File (R1)
ITEM : File Store
(Press the MENU SEL switch to execute.)

Section 5
Spare Parts

5-1. Notes on Repair Parts

1. WARNING Safety Related Components Warning

Components marked ⚠ are critical to safe operation. Therefore, specified parts should be used in the case of replacement.

2. Standardization of Parts

Some repair parts supplied by Sony differ from those used for the unit. These are because of parts commonality and improvement.
Parts list has the present standardized repair parts.

3. Stock of Parts

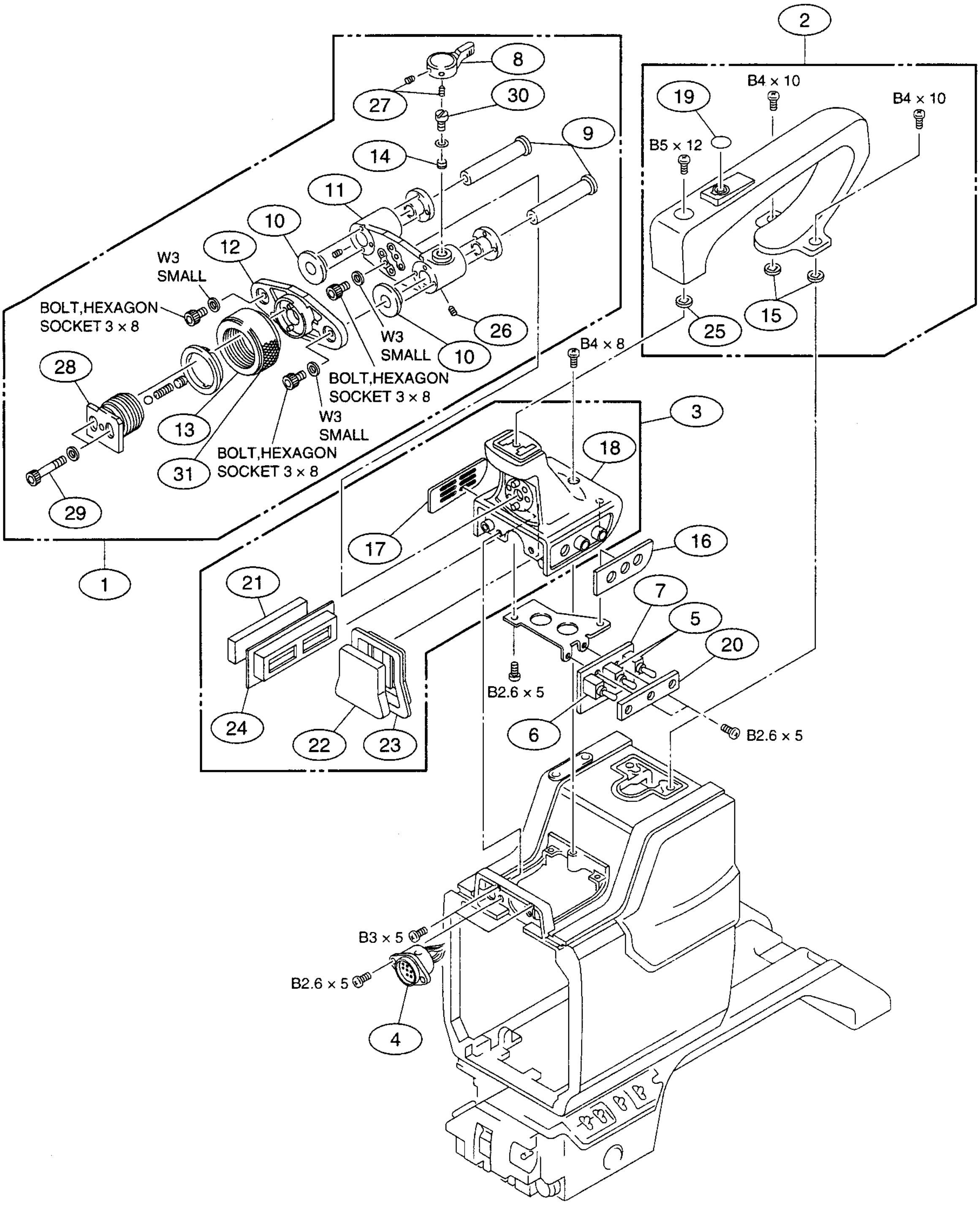
Parts marked with “o” at SP (Supply Code) column of the spare parts list may be not stocked.
Therefore, the delivery date will be delayed.

4. Units Representation

The following represented units are changed or omitted in writing.

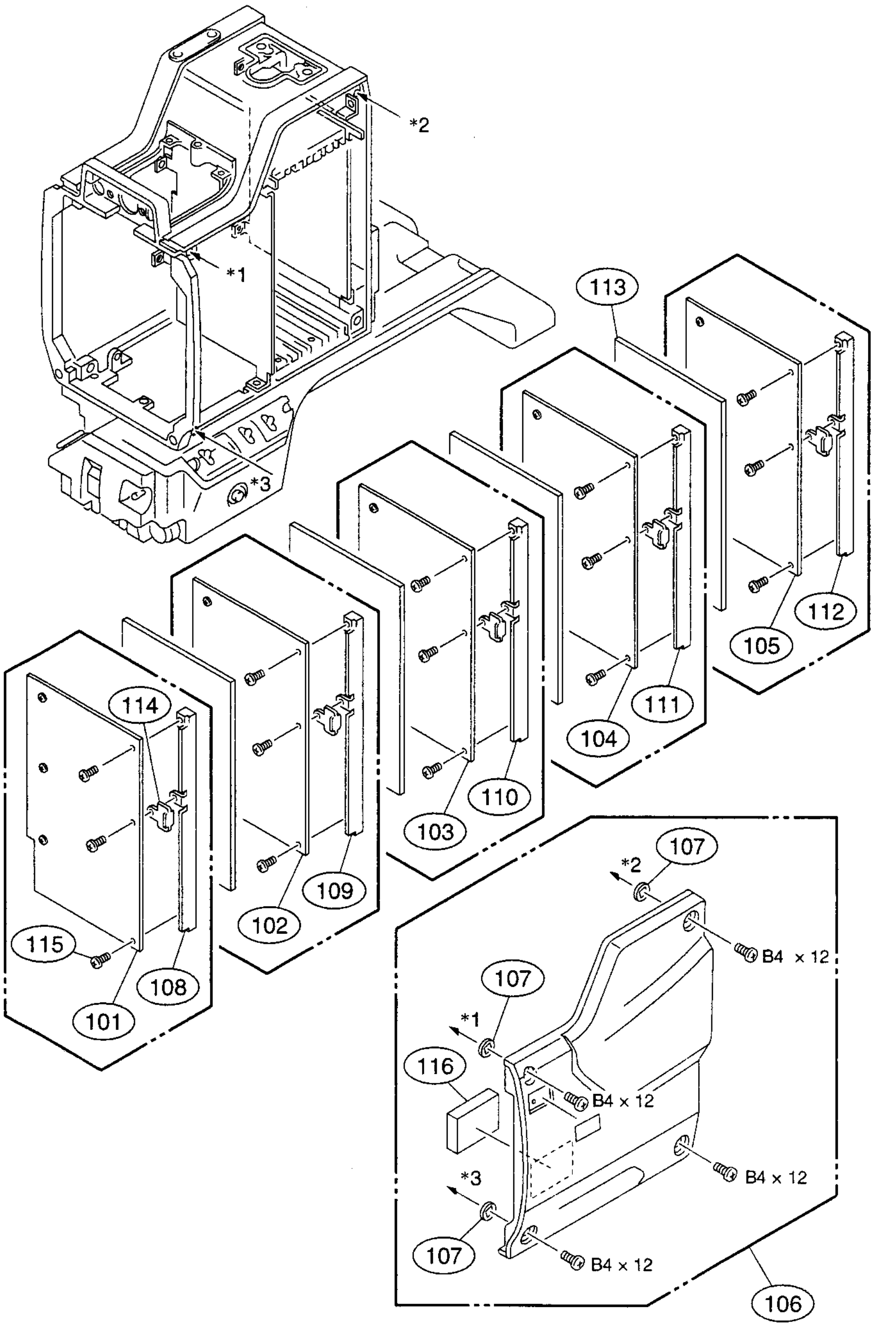
Units		Representation
Capacitance	μF	uF
Inductance	μH	uH
Resistance	Ω	Abbreviation

5-2. Exploded Views


2
8
B4 x 10
27
30
19
B4 x 10
9
B5 x 12
14
11
10
12
W3
SMALL
BOLT,HEXAGON
SOCKET 3 x 8
26
W3
SMALL
10
25
15
B4 x 8
28
BOLT,HEXAGON
SOCKET 3 x 8
13
W3
SMALL
3
BOLT,HEXAGON
SOCKET 3 x 8
31
18
29
17
16
1
21
7
5
20
B2.6 x 5
24
22
23
6
B2.6 x 5
B3 x 5
B2.6 x 5
4

No.	Part No.	SP	Description
1	A-8278-029-A	o	SLIDE ASSY,VF
2	X-3678-451-2	o	HANDLE ASSY
3	X-3678-484-1	o	HOLDER SUB ASSY,HANDLE
4	1-565-051-21	o	CONNECTOR 20P, FEMALE "VF"
5	1-570-985-11	s	SWITCH TOGGLE "R/G/B" "ENC/RGB"
6	1-571-396-11	s	SWITCH TOGGLE "DIPS ON/OFF/MENU"
7	1-657-442-22	o	PRINTED CIRCUIT BOARD, SW-732
8	3-673-046-00	s	LEVER, LOCK
9	3-679-683-01	o	ARM,SLIDE
10	3-679-684-01	o	REST,ARM
11	3-679-685-01	o	TABEL,FIXED,VF SLIDE
12	3-679-686-01	o	TABEL,FIXED,VF SHOE
13	3-679-698-01	o	RING(C),LOCK
14	3-679-702-01	o	CUSION,STOPPER
15	3-687-116-01	o	WASHER(4), STOPPER
16	3-692-112-01	o	PLATE,MENU
17	3-692-150-01	o	SHEET,DROP PROTECTION
18	3-692-165-01	o	HOLDER,HANDOLE
19	3-692-649-01	s	SHEET, BLIND
20	3-693-984-01	s	CUSSHION, DROP PROTECTION (3)
21	3-694-196-01	s	SHEET, DUST PROTECTION (S)
22	3-694-197-01	o	SHEET, DUST PROTECTION (F)
23	3-694-198-01	s	RETAINER, DROP PROTECTION (F)
24	3-694-199-01	s	RETAINER DROP, PROTECTION (S)
25	3-701-442-21	s	WASHER, 4.5
26	3-701-506-01	s	SET SCREW, DOUBLE POINT 3X4
27	3-701-508-00	s	SET SCREW, DOUBLE POINT 3X6
28	3-710-039-03	s	SHOE, SLIDE
29	3-711-765-01	s	BOLT (M3), HEXAGON SOCKET
30	3-711-794-01	o	PIN, STOPPER
31	3-720-919-01	o	RUBBER, LOCK RING

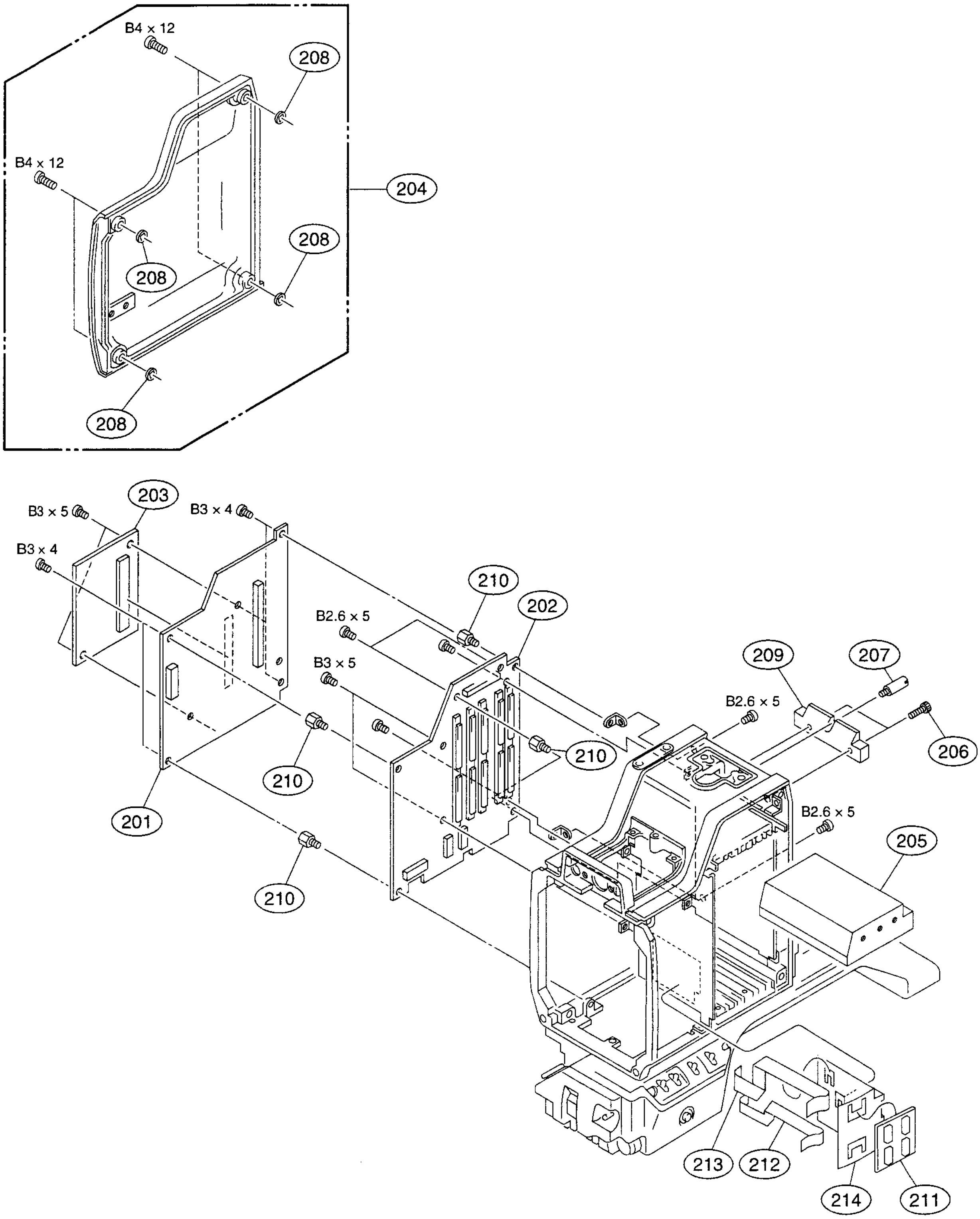
RIGHT PANEL AND PLUG-IN BOARDS


*2
*1
*3
113
112
105
111
104
110
103
109
102
114
115
108
101
107
*2
B4 × 12
107
*1
116
B4 × 12
B4 × 12
*3
107
B4 × 12
106

No.	Part No.	SP	Description
101	A-8272-560-A	o	MOUNTED CIRCUIT BOARD, VA-163
102	A-8272-562-A	o	MOUNTED CIRCUIT BOARD, AT-95
103	A-8272-564-A	o	MOUNTED CIRCUIT BOARD, SG-234
104	A-8272-566-A	o	MOUNTED CIRCUIT BOARD, DA-88
105	A-8272-568-A	o	MOUNTED CIRCUIT BOARD, IF-510
106	X-3678-480-2	o	PANEL ASSY, RIGHT
107	3-687-116-01	o	WASHER (4), STOPPER
108	3-692-125-02	o	PANEL,VA-163 PC BOARD
109	3-692-126-02	o	PANEL,AT-95 PC BOARD
110	3-692-127-02	o	PANEL,SG-234 PC BOARD
111	3-692-128-02	o	PANEL,DA-88 PC BOARD
112	3-692-129-02	o	PANEL,IF-510 PC BOARD
113	3-692-642-01	o	SHEET,SHIELD
114	3-724-753-01	o	RING
115	3-729-061-01	s	SCREW (M2X4.5) (TYPE 1)
116	3-693-982-01	o	CUSHION (MPX) *1

*1 :S/N 16371 and higher

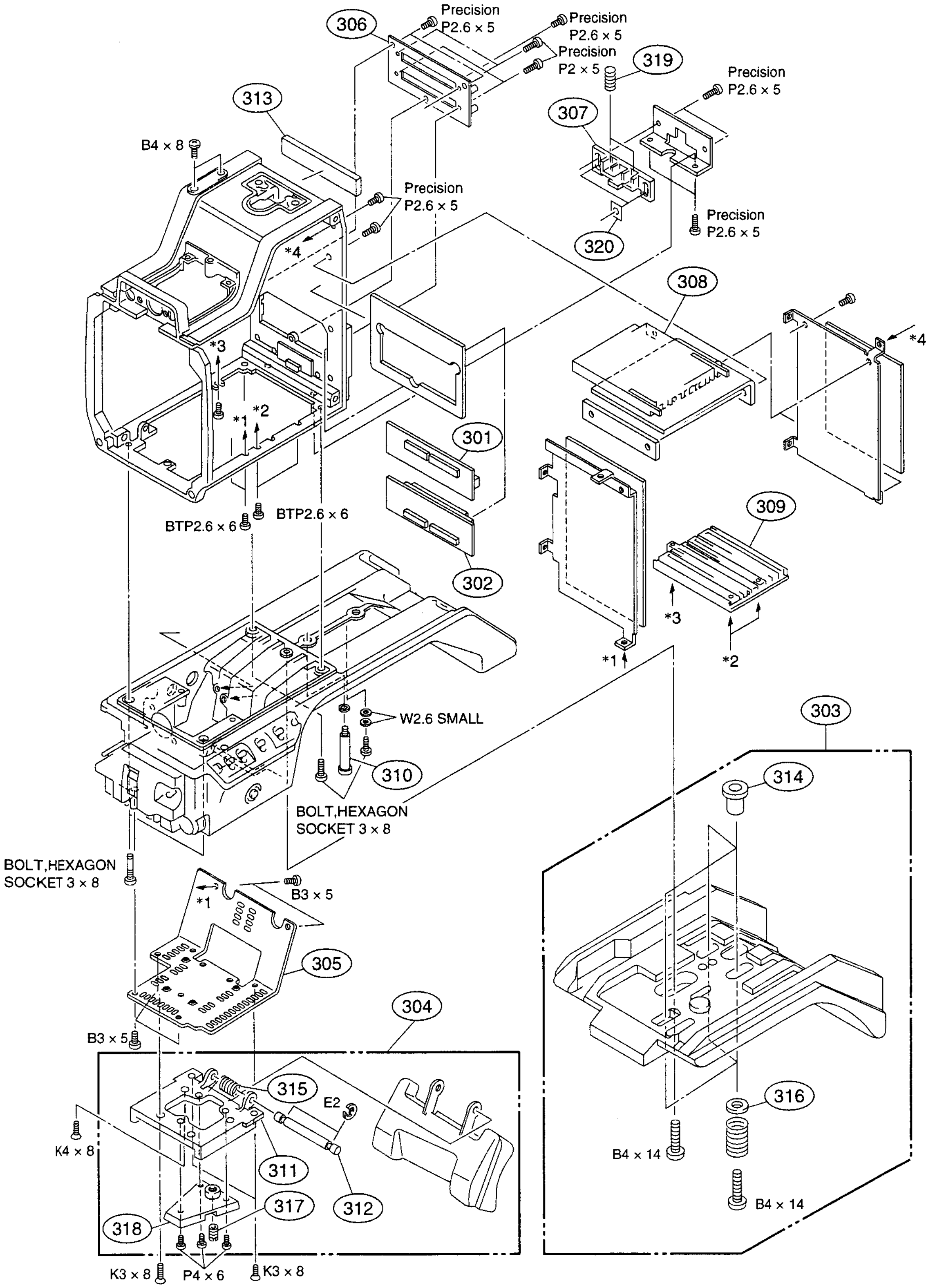
LEFT PANEL AND BOARDS


B4 × 12
208
B4 × 12
204
208
208
208
203
B3 × 5
B3 × 4
B3 × 4
210
202
B2.6 × 5
B3 × 5
209
207
B2.6 × 5
206
210
210
201
B2.6 × 5
205
210
213
212
214
211

No.	Part No.	SP	Description
201	A-8272-557-A	o	MOUNTED CIRCUIT BOARD, PR-211
202	A-8272-547-A	o	MOUNTED CIRCUIT BOARD, MB-602
203	A-8272-559-A	o	MOUNTED CIRCUIT BOARD, CN-1142
204	X-3678-481-1	o	PANEL ASSY, LEFT
205	⚠ A-8272-571-A	s	CONVERTER ASSY, DC-DC
206	2-623-773-11	s	BOLT (M3X8), STAINLESS
207	3-168-296-01	s	PIN, ID
208	3-687-116-01	o	WASHER (4), STOPPER
209	3-692-113-03	o	WEDGE,HANGER
210	4-924-260-01	o	BOSS (D)
211	A-8315-489-A	o	MOUNTED CIRCUIT BOARD, CN-1504 *1
212	1-782-697-11	o	CABLE FLEXIBLE FLAT (20 CORE) *1
213	1-782-698-11	o	CABLE FLEXIBLE FLAT (24 CORE) *1
214	3-608-926-01	o	SUPPORT, PC BOARD *1

*1 :S/N 16371 and higher

CHASSIS AND SHOULDER PAD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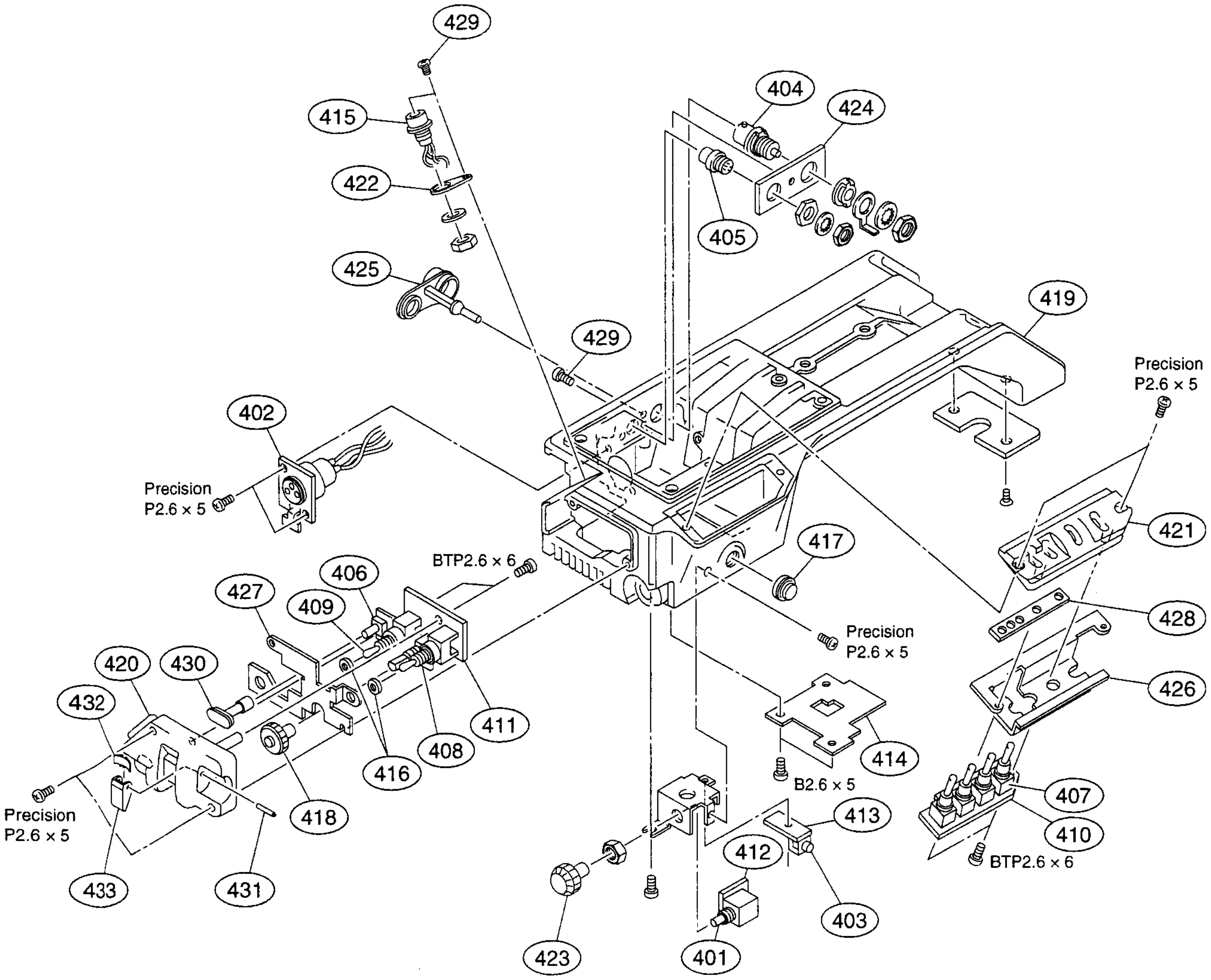
Precision
P2.6 × 5
Precision
P2.6 × 5
Precision
P2 × 5
319
Precision
P2.6 × 5
313
307
B4 × 8
Precision
P2.6 × 5
*4
Precision
P2.6 × 5
320
308
*4
*3
*1
*2
301
309
BTP2.6 × 6
BTP2.6 × 6
302
*3
*1
*2
303
W2.6 SMALL
310
314
BOLT,HEXAGON
SOCKET 3 × 8
BOLT,HEXAGON
SOCKET 3 × 8
B3 × 5
*1
305
304
B3 × 5
315
E2
316
K4 × 8
311
B4 × 14
317
312
B4 × 14
318
K3 × 8
P4 × 6
K3 × 8

No.	Part No.	SP	Description
301	A-8272-549-A	o	MOUNTED PCB, CN-1120
302	A-8272-550-A	o	MOUNTED PCB, CN-1121
303	A-8278-237-A	s	PAD ASSY (LARGE)
304	A-8278-238-A	s	PAD ASSY (SMALL)
305	3-692-102-12	o	BRACKET V SHOE
306	3-692-114-02	o	PLATE,CONNECTOR(136P)
307	3-692-115-03	o	SHOE,LOCK
308	3-692-117-02	o	RAIL
309	3-692-119-01	o	RAIL,CAM
310	3-692-641-03	o	ROD,LOCK
311	3-692-643-02	o	BASE,V SHOE
312	3-692-645-01	o	ROD,ROTARY
313	3-692-646-01	o	SHEET,DUST PROTECTION (PS)
314	3-692-647-01	o	SPACER,PAD
315	3-693-973-01	s	SPRING, TORSION (SMALL)
316	3-701-444-21	s	WASHER, 6
317	3-742-011-01	s	SCREW, 1/4, 3/8 CONVERSION
318	3-742-015-01	o	WEDGE (B), MOUNTING
319	4-864-521-01	s	SPRING (PC BOARD GROUND)
320	3-604-691-01	o	SHEET,LUBRICATION (LOCK) S/N 15441 and higher

BOTTOM BLOCK


429
415
422
425
404
424
405
419
429
402
Precision
P2.6 × 5
Precision
P2.6 × 5
421
417
BTP2.6 × 6
406
427
409
Precision
P2.6 × 5
428
420
430
432
411
426
408
416
414
B2.6 × 5
407
413
410
BTP2.6 × 6
412
418
Precision
P2.6 × 5
433
431
403
423
401

No.	Part No.	SP	Description
401	1-473-315-11	s	ENCODER ROTARY "MENU SEL"
402	1-509-184-51	s	CONNECTOR 3P, FEMALE "MIC"
403	1-554-088-00	s	SWITCH, TACTILE "CANCEL"
404	1-561-781-91	s	CONNECTOR, BNC "TEST OUT"
405	1-562-222-41	s	CONNECTOR 6P, FEMALE "REMOTE"
406	1-570-282-21	s	SWITCH KEY BOARD "VTR START"
407	1-571-415-11	s	SWITCH TOGGLE "CAMERA/VTR" "GAIN" "OUTPUT" WHITE BAL"
408	1-571-416-11	s	SWITCH TOGGLE "AUTO W/B BAL"
409	1-571-679-11	s	SWITCH TOGGLE "SHUTTER"
410	1-657-443-21	o	PRINTED CIRCUIT BOARD, SW-730
411	1-657-444-21	o	PRINTED CIRCUIT BOARD, SW-731
412	1-657-445-21	o	PRINTED CIRCUIT BOARD, SW-733
413	1-657-446-21	o	PRINTED CIRCUIT BOARD, SW-742
414	1-657-447-21	o	PRINTED CIRCUIT BOARD, CN-1122
415	1-695-841-12	s	CONNECTOR 12P, FEMALE "LENS"
416	3-312-823-00	s	PACKING, KNOB
417	3-676-244-11	s	COVER, SW
418	3-679-679-03	s	KNOB,VR(AUDIO)
419	3-692-106-12	o	BASE,SHOULDER
420	3-692-107-02	o	COVER,FRONT SWITCH
421	3-692-108-01	o	GUARD,SWITCH
422	3-692-110-02	o	BRACKET,CONNECTOR
423	3-692-111-01	s	KNOB,RE "MIC LEVEL"
424	3-692-149-02	o	BRACKET,CONNECTOR(TEST OUT)
425	3-692-644-02	o	CAP,CONNECTOR
426	3-693-974-01	o	PLATE, SHIELD (SIDE)
427	3-693-976-01	o	PLATE, SHUTTER (FRONT)
428	3-693-983-01	o	CUSSHION, DROP PROTECTION (2)
429	3-694-181-01	s	TYPE1, AROCK PRECISION +P2.6
430	3-729-069-01	s	BUTTON, VTR START
431	3-742-065-01	o	SHAFT, SHUTTER
432	3-742-066-11	o	SPRING, SHUTTER
433	3-742-067-04	o	LID, SHUTTER

SCREWS AND WASHERS

No.	Part No.	SP	Description
	7-621-770-87	s	SCREW +B 2.6X5
	7-623-208-22	o	SW 3,TYPE 2
	7-623-505-01	s	LUG, 2
	7-624-104-04	s	STOP RING 2.0, TYPE -E
	7-624-105-04	s	STOP RING 2.3, TYPE -E
	7-624-200-01	s	NUT, PUSH 1.5
	7-627-452-38	s	SCREW,PRECISION +K 2X5
	7-627-454-38	s	SCREW, PRECISION +K 2.6X5
	7-627-553-78	s	SCREW,PRECISION +P 2X10
	7-627-554-18	s	SCREW,PRECISION +P 2X3.5 TYPE1
	7-627-556-57	s	PRECISION SCREW +P 2.6X5 TYPE1
	7-627-556-58	s	SCREW +P 2.6X5
	7-671-158-01	s	BALL, STAINLESS (2.5 DIA)
	7-682-160-09	s	SCREW +P 4X6
	7-682-247-04	s	SCREW +K 3X6
	7-682-248-09	s	SCREW +K 3X8
	7-682-261-09	s	SCREW +K 4X8
	7-682-545-04	s	SCREW +B 3X4
	7-682-546-04	s	SCREW +B 3X5
	7-682-546-09	s	SCREW +B 3X5
	7-682-561-09	s	SCREW +B 4X8
	7-682-563-09	s	SCREW +B 4X12
	7-682-564-09	s	SCREW +B 4X14
	7-682-576-09	s	SCREW +B 5X12
	7-683-404-04	s	BOLT,HEXAGON SOCKET 3X8
	7-683-405-04	s	BOLT,HEXAGON SOCKET 3X10
	7-683-412-05	s	BOLT,HEXAGON SOCKET 2.6X6
	7-685-104-19	s	SCREW +P 2X6 TYPE2 NON-SLIT
	7-685-134-19	s	SCREW +P 2.6X8 TYPE2 NON-SLIT
	7-685-533-19	s	SCREW +BTP 2.6X6 TYPE2 N-S
	7-688-002-02	s	W2.6, SHALL
	7-688-003-02	s	W 3, SMALL

5-3. Electrical Parts List

AT-95 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-8272-562-A	o	MOUNTED CIRCUIT BOARD, AT-95
1pc	3-692-126-02	o	PANEL,AT-95 PC BOARD
1pc	3-724-753-01	o	RING
6pcs	3-729-061-01	s	SCREW (M2X4.5) (TYPE 1)
BT1	1-550-104-32	s	HOLDER, BATTERY
C1	1-162-927-11	s	CERAMIC, CHIP 100PF 5% 50V
C2	1-162-964-11	s	CERAMIC 0.001uF 10% 50V
C3	1-164-156-11	s	CERAMIC 0.1uF 25V
C4	1-164-156-11	s	CERAMIC 0.1uF 25V
C5	1-107-688-11	s	CHIP,TANTALUM 1.5uF 20% 25V
C6	1-164-156-11	s	CERAMIC 0.1uF 25V
C7	1-107-688-11	s	CHIP,TANTALUM 1.5uF 20% 25V
C8	1-126-392-11	s	ELECT, CHIP 100uF 20% 6.3V
C9	1-164-156-11	s	CERAMIC 0.1uF 25V
C10	1-164-156-11	s	CERAMIC 0.1uF 25V
C11	1-164-156-11	s	CERAMIC 0.1uF 25V
C12	1-135-165-11	s	TANTALUM, CHIP 33uF 10% 16V
C13	1-135-165-11	s	TANTALUM, CHIP 33uF 10% 16V
C14	1-164-156-11	s	CERAMIC 0.1uF 25V
C16	1-164-156-11	s	CERAMIC 0.1uF 25V
C17	1-135-215-21	s	TANTALUM, CHIP 6.8uF 20% 16V
C18	1-164-156-11	s	CERAMIC 0.1uF 25V
C19	1-126-392-11	s	ELECT, CHIP 100uF 20% 6.3V
C20	1-164-156-11	s	CERAMIC 0.1uF 25V
C21	1-162-927-11	s	CERAMIC, CHIP 100PF 5% 50V
C22	1-164-156-11	s	CERAMIC 0.1uF 25V
C23	1-164-156-11	s	CERAMIC 0.1uF 25V
C24	1-164-156-11	s	CERAMIC 0.1uF 25V
C25	1-164-156-11	s	CERAMIC 0.1uF 25V
C26	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C27	1-164-156-11	s	CERAMIC 0.1uF 25V
C28	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C29	1-164-156-11	s	CERAMIC 0.1uF 25V
C30	1-164-156-11	s	CERAMIC 0.1uF 25V
C31	1-135-180-21	s	TANTALUM, CHIP 3.3uF 20% 6.3V
C32	1-162-966-11	s	CERAMIC, CHIP 0.0022uF 10% 50V
C33	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C34	1-135-076-21	s	TANTALUM, CHIP 1uF 10% 35V
C35	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C36	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C37	1-164-156-11	s	CERAMIC 0.1uF 25V
C38	1-164-156-11	s	CERAMIC 0.1uF 25V
C39	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C40	1-135-085-21	s	TANTALUM, CHIP 4.7uF 10% 25V
C41	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C42	1-162-964-11	s	CERAMIC 0.001uF 10% 50V
C43	1-164-156-11	s	CERAMIC 0.1uF 25V
C44	1-164-156-11	s	CERAMIC 0.1uF 25V
C45	1-164-156-11	s	CERAMIC 0.1uF 25V
C46	1-164-156-11	s	CERAMIC 0.1uF 25V
C47	1-164-156-11	s	CERAMIC 0.1uF 25V
C48	1-135-215-21	s	TANTALUM, CHIP 6.8uF 20% 16V
C49	1-164-156-11	s	CERAMIC 0.1uF 25V
C50	1-135-157-21	s	TANTAL 10uF 10% 6.3V
C51	1-164-156-11	s	CERAMIC 0.1uF 25V
C52	1-164-156-11	s	CERAMIC 0.1uF 25V
C53	1-164-156-11	s	CERAMIC 0.1uF 25V
C54	1-164-156-11	s	CERAMIC 0.1uF 25V
C55	1-164-156-11	s	CERAMIC 0.1uF 25V
C56	1-164-156-11	s	CERAMIC 0.1uF 25V
C57	1-164-156-11	s	CERAMIC 0.1uF 25V
C58	1-164-156-11	s	CERAMIC 0.1uF 25V
C59	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C60	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C61	1-164-156-11	s	CERAMIC 0.1uF 25V
C62	1-164-156-11	s	CERAMIC 0.1uF 25V
C63	1-164-156-11	s	CERAMIC 0.1uF 25V
C64	1-164-156-11	s	CERAMIC 0.1uF 25V
C65	1-164-156-11	s	CERAMIC 0.1uF 25V
C66	1-162-927-11	s	CERAMIC, CHIP 100PF 5% 50V
C67	1-162-927-11	s	CERAMIC, CHIP 100PF 5% 50V
C68	1-162-927-11	s	CERAMIC, CHIP 100PF 5% 50V
C69	1-162-927-11	s	CERAMIC, CHIP 100PF 5% 50V
C70	1-162-927-11	s	CERAMIC, CHIP 100PF 5% 50V
C71	1-131-360-00	s	TANTALUM 15uF 10% 10V
C80	1-164-156-11	s	CERAMIC 0.1uF 25V
C81	1-126-925-11	s	ELECT, CHIP 470uF 20% 10V
CNI36	1-540-197-11	o	SOCKET, IC
D1	8-719-029-63	s	DIODE RD4.3UH-T1
D2	8-719-820-41	s	DIODE 1SS302
D3	8-719-974-76	s	DIODE HSM107S
D4	8-719-974-76	s	DIODE HSM107S
D5	8-719-820-41	s	DIODE 1SS302
D6	8-719-974-76	s	DIODE HSM107S
D7	8-719-974-76	s	DIODE HSM107S
D8	8-719-974-76	s	DIODE HSM107S
D10	8-719-974-76	s	DIODE HSM107S
D11	8-719-974-76	s	DIODE HSM107S
D12	8-719-974-76	s	DIODE HSM107S
D13	8-719-974-76	s	DIODE HSM107S
D15	8-719-974-76	s	DIODE HSM107S
D16	8-719-820-41	s	DIODE 1SS302
D17	8-719-820-41	s	DIODE 1SS302
D18	8-719-820-41	s	DIODE 1SS302
D19	8-719-820-41	s	DIODE 1SS302
D20	8-719-820-41	s	DIODE 1SS302
D21	8-719-820-41	s	DIODE 1SS302
D22	8-719-820-41	s	DIODE 1SS302
IC1	8-759-252-59	s	IC MAX202CSE
IC2	8-759-242-78	s	IC TC7W02F
IC3	8-759-079-74	s	IC TC74VHC157FS(EL)
IC4	8-759-076-06	s	IC TL064CPW
IC5	8-759-076-06	s	IC TL064CPW
IC6	8-759-637-07	s	IC M62021FP
IC7	8-759-089-61	s	IC TC74HC4052AFS(EL)
IC8	8-759-082-60	s	IC TC7S66FU
IC9	8-759-076-06	s	IC TL064CPW
IC11	8-759-906-53	s	IC TL062CPS
IC12	8-759-711-50	s	IC NJU7022M
IC13	8-759-059-50	s	IC MB88351PFV
IC14	8-759-082-57	s	IC TC7W04FU
IC15	8-759-083-94	s	IC TC7W74FU
IC17	8-759-058-64	s	IC TC7S32FU(TE85R)
IC18	8-759-271-84	s	IC TC7SH02FU
IC19	8-759-271-86	s	IC TC7SH04FU
IC20	8-759-196-96	s	IC TC7SH08FU-TE85R
IC21	8-759-271-84	s	IC TC7SH02FU

(AT-95 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
IC22	8-759-196-97	s	IC TC7SH32FU-TE85R
IC23	8-759-186-31	s	IC TC74VHC20F
IC24	8-759-079-70	s	IC TC74VHC138FS(EL)
IC25	8-759-065-20	s	IC RTC-4553B
IC26	8-752-337-91	s	IC CXK58257ATM-70LL
IC27	8-759-154-60	s	IC UPD71055GB-10-3B4
IC28	8-759-154-60	s	IC UPD71055GB-10-3B4
IC29	8-759-149-10	s	IC UPD4702G
IC30	8-759-271-84	s	IC TC7SH02FU
IC31	8-759-196-97	s	IC TC7SH32FU-TE85R
IC32	8-759-242-78	s	IC TC7W02F
IC33	8-759-186-53	s	IC TC74VHC163F
IC34	8-759-186-53	s	IC TC74VHC163F
IC35	8-759-277-99	s	IC CXD8889R
IC36	8-759-493-58	o	IC M27V201-BVP500-V2.01
IC37	8-759-196-96	s	IC TC7SH08FU-TE85R
IC38	8-759-182-95	s	IC HD151015T
IC39	8-759-079-85	s	IC TC74VHC244FS(EL)
IC40	8-759-079-61	s	IC TC74VHC74FS(EL)
IC41	8-759-195-81	s	IC TC7S86FU
IC42	8-759-186-53	s	IC TC74VHC163F
IC43	8-759-082-57	s	IC TC7W04FU
IC44	8-759-186-53	s	IC TC74VHC163F
IC45	8-759-083-94	s	IC TC7W74FU
IC46	8-759-165-37	s	IC X24164SIC7000
IC47	8-759-078-75	s	IC UPD6453GT-610
IC48	8-759-276-00	s	IC TC7W139FU(TE12R)
L1	1-410-737-31	s	INDUCTOR CHIP 0.47uH
L2	1-410-377-31	s	INDUCTOR CHIP 4.7uH
Q1	8-729-141-48	s	TRANSISTOR 2SB624-BV345
Q2	8-729-402-19	s	TRANSISTOR XN6501
Q3	8-729-920-48	s	TRANSISTOR IMH2
Q4	8-729-925-47	s	TRANSISTOR IMB2
Q5	8-729-920-48	s	TRANSISTOR IMH2
Q6	8-729-920-48	s	TRANSISTOR IMH2
R1	1-216-794-11	s	METAL, CHIP 5.6 5% 1/16W
R2	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R3	1-216-831-11	s	METAL, CHIP 6.8K 5% 1/16W
R4	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R5	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R6	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R7	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R8	1-216-829-11	s	METAL, CHIP 4.7K 5% 1/16W
R9	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R10	1-216-837-11	s	METAL, CHIP 22K 5% 1/16W
R11	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R12	1-216-794-11	s	METAL, CHIP 5.6 5% 1/16W
R13	1-216-864-11	s	METAL, CHIP 0 5% 1/16W
R14	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R15	1-216-864-11	s	METAL, CHIP 0 5% 1/16W
R16	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R17	1-216-858-11	s	METAL, CHIP 1.2M 5% 1/16W
R18	1-218-723-11	s	METAL 20K 0.50% 1/16W
R19	1-216-692-11	s	METAL, CHIP 1K 0.5% 1/16W
R20	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R21	1-218-668-11	s	CHIP, METAL 100 0.50% 1/16W
R22	1-218-724-11	s	CHIP, METAL 22K 5% 1/16W

(AT-95 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R23	1-216-794-11	s	METAL, CHIP 5.6 5% 1/16W
R25	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R26	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R28	1-218-889-11	s	CHIP, METAL 56K 0.50% 1/16W
R29	1-216-857-11	s	METAL, CHIP 1M 5% 1/16W
R30	1-218-858-11	s	CHIP, METAL 3K 0.50% 1/16W
R31	1-218-720-11	s	METAL 15K 0.50% 1/16W
R32	1-216-839-11	s	METAL, CHIP 33K 5% 1/16W
R33	1-216-862-11	s	METAL 2.7M 5% 1/16W
R34	1-216-857-11	s	METAL, CHIP 1M 5% 1/16W
R35	1-216-857-11	s	METAL, CHIP 1M 5% 1/16W
R36	1-216-857-11	s	METAL, CHIP 1M 5% 1/16W
R37	1-216-863-11	s	METAL 3.3M 5% 1/16W
R38	1-216-857-11	s	METAL, CHIP 1M 5% 1/16W
R39	1-216-857-11	s	METAL, CHIP 1M 5% 1/16W
R40	1-218-716-11	s	METAL 10K 0.50% 1/16W
R41	1-218-724-11	s	CHIP, METAL 22K 5% 1/16W
R42	1-216-819-11	s	METAL, CHIP 680 5% 1/16W
R43	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R44	1-218-707-11	s	CHIP, METAL 4.3K 0.50% 1/16W
R45	1-216-825-11	s	METAL, CHIP 2.2K 5% 1/16W
R46	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R47	1-218-716-11	s	METAL 10K 0.50% 1/16W
R48	1-218-873-11	s	CHIP, METAL 12K 0.50% 1/16W
R49	1-218-716-11	s	METAL 10K 0.50% 1/16W
R50	1-218-724-11	s	CHIP, METAL 22K 5% 1/16W
R51	1-216-864-11	s	METAL, CHIP 0 5% 1/16W
R52	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R53	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R54	1-216-836-11	s	METAL, CHIP 18K 5% 1/16W
R55	1-218-867-11	s	CHIP, METAL 6.8K 0.50% 1/16W
R56	1-216-824-11	s	METAL, CHIP 1.8K 5% 1/16W
R57	1-218-716-11	s	METAL 10K 0.50% 1/16W
R58	1-218-873-11	s	CHIP, METAL 12K 0.50% 1/16W
R59	1-216-820-11	s	METAL, CHIP 820 5% 1/16W
R60	1-216-855-11	s	METAL, CHIP 680K 5% 1/16W
R61	1-216-854-11	s	METAL, CHIP 560K 5% 1/16W
R62	1-218-752-11	s	METAL 330K 0.50% 1/16W
R63	1-216-854-11	s	METAL, CHIP 560K 5% 1/16W
R64	1-218-750-11	s	METAL 270K 0.50% 1/16W
R66	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R70	1-216-857-11	s	METAL, CHIP 1M 5% 1/16W
R71	1-216-829-11	s	METAL, CHIP 4.7K 5% 1/16W
R72	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R73	1-216-829-11	s	METAL, CHIP 4.7K 5% 1/16W
R74	1-216-829-11	s	METAL, CHIP 4.7K 5% 1/16W
R75	1-216-829-11	s	METAL, CHIP 4.7K 5% 1/16W
R76	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R77	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R78	1-216-797-11	s	METAL, CHIP 10 5% 1/16W
R79	1-216-828-11	s	METAL, CHIP 3.9K 5% 1/16W
R80	1-216-797-11	s	METAL, CHIP 10 5% 1/16W
R81	1-216-797-11	s	METAL, CHIP 10 5% 1/16W
R82	1-218-866-11	s	CHIP, METAL 6.2K 0.50% 1/16W
R83	1-216-797-11	s	METAL, CHIP 10 5% 1/16W
R84	1-216-797-11	s	METAL, CHIP 10 5% 1/16W
R85	1-216-797-11	s	METAL, CHIP 10 5% 1/16W
R86	1-216-797-11	s	METAL, CHIP 10 5% 1/16W
R87	1-216-797-11	s	METAL, CHIP 10 5% 1/16W

(AT-95 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R88	1-216-797-11	s	METAL, CHIP 10 5% 1/16W
R89	1-216-841-11	s	METAL, CHIP 47K 5% 1/16W
R90	1-216-841-11	s	METAL, CHIP 47K 5% 1/16W
R91	1-216-797-11	s	METAL, CHIP 10 5% 1/16W
R92	1-216-797-11	s	METAL, CHIP 10 5% 1/16W
R93	1-216-797-11	s	METAL, CHIP 10 5% 1/16W
R94	1-216-797-11	s	METAL, CHIP 10 5% 1/16W
R95	1-216-797-11	s	METAL, CHIP 10 5% 1/16W
R96	1-216-797-11	s	METAL, CHIP 10 5% 1/16W
R97	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R98	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R99	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R100	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R101	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R102	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R103	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R104	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R105	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R106	1-216-849-11	s	METAL, CHIP 220K 5% 1/16W
R107	1-216-841-11	s	METAL, CHIP 47K 5% 1/16W
R108	1-216-841-11	s	METAL, CHIP 47K 5% 1/16W
R109	1-216-841-11	s	METAL, CHIP 47K 5% 1/16W
R110	1-216-825-11	s	METAL, CHIP 2.2K 5% 1/16W
R111	1-216-825-11	s	METAL, CHIP 2.2K 5% 1/16W
R114	1-216-825-11	s	METAL, CHIP 2.2K 5% 1/16W
R115	1-216-825-11	s	METAL, CHIP 2.2K 5% 1/16W
R118	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R119	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R120	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R121	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R122	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R123	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R124	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R125	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R126	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R127	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R128	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R129	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R130	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R131	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R132	1-216-841-11	s	METAL, CHIP 47K 5% 1/16W
R133	1-216-841-11	s	METAL, CHIP 47K 5% 1/16W
R134	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R135	1-216-841-11	s	METAL, CHIP 47K 5% 1/16W
R136	1-216-841-11	s	METAL, CHIP 47K 5% 1/16W
R137	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R138	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R139	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R140	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R141	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R142	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R143	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R144	1-216-841-11	s	METAL, CHIP 47K 5% 1/16W
R145	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R146	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R147	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R148	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R149	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R150	1-216-809-11	s	METAL, CHIP 100 5% 1/16W

(AT-95 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R151	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R152	1-216-841-11	s	METAL, CHIP 47K 5% 1/16W
R153	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R154	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R155	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R160	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R161	1-216-862-11	s	METAL 2.7M 5% 1/16W
R162	1-216-864-11	s	METAL, CHIP 0 5% 1/16W
R163	1-216-864-11	s	METAL, CHIP 0 5% 1/16W
R164	1-218-751-11	s	METAL, CHIP 300K 0.50% 1/16
R165	1-218-858-11	s	CHIP, METAL 3K 0.50% 1/16W
R166	1-216-821-11	s	CHIP, METAL 1K 5% 1/16W
RV1	1-237-035-11	s	RES, ADJ METAL 5K
S1	1-692-270-21	s	SWITCH, SLIDE

CN-1120 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-8272-549-A	o	MOUNTED CIRCUIT BOARD, CN-1120
C1	1-163-275-11	s	CERAMIC 0.001uF 5% 50V
C2	1-163-275-11	s	CERAMIC 0.001uF 5% 50V
C3	1-163-275-11	s	CERAMIC 0.001uF 5% 50V
C4	1-163-275-11	s	CERAMIC 0.001uF 5% 50V
C5	1-163-275-11	s	CERAMIC 0.001uF 5% 50V
C6	1-163-275-11	s	CERAMIC 0.001uF 5% 50V
CN201	1-569-532-11	s	HOUSING, 30P
CN202	1-569-532-11	s	HOUSING, 30P
FL1	1-239-719-11	s	FILTER, CHIP EMI
FL2	1-239-719-11	s	FILTER, CHIP EMI
FL3	1-239-719-11	s	FILTER, CHIP EMI
FL4	1-239-825-11	s	FILTER, CHIP EMI
FL5	1-239-719-11	s	FILTER, CHIP EMI
FL6	1-239-825-11	s	FILTER, CHIP EMI
FL7	1-239-719-11	s	FILTER, CHIP EMI
FL8	1-239-719-11	s	FILTER, CHIP EMI
FL9	1-239-719-11	s	FILTER, CHIP EMI
FL10	1-239-825-11	s	FILTER, CHIP EMI
FL11	1-239-719-11	s	FILTER, CHIP EMI
FL12	1-239-825-11	s	FILTER, CHIP EMI
FL13	1-239-719-11	s	FILTER, CHIP EMI
FL14	1-239-825-11	s	FILTER, CHIP EMI
FL15	1-239-719-11	s	FILTER, CHIP EMI
FL16	1-239-825-11	s	FILTER, CHIP EMI
FL17	1-239-719-11	s	FILTER, CHIP EMI
FL18	1-239-825-11	s	FILTER, CHIP EMI
FL19	1-239-825-11	s	FILTER, CHIP EMI
FL20	1-239-825-11	s	FILTER, CHIP EMI
FL21	1-239-825-11	s	FILTER, CHIP EMI
FL22	1-239-719-11	s	FILTER, CHIP EMI
FL23	1-239-719-11	s	FILTER, CHIP EMI
FL24	1-239-719-11	s	FILTER, CHIP EMI
FL25	1-239-825-11	s	FILTER, CHIP EMI
FL26	1-239-719-11	s	FILTER, CHIP EMI
FL27	1-239-825-11	s	FILTER, CHIP EMI
FL28	1-239-825-11	s	FILTER, CHIP EMI
FL29	1-239-825-11	s	FILTER, CHIP EMI
FL30	1-239-825-11	s	FILTER, CHIP EMI
FL31	1-239-825-11	s	FILTER, CHIP EMI
FL32	1-239-825-11	s	FILTER, CHIP EMI
FL33	1-239-825-11	s	FILTER, CHIP EMI
FL34	1-239-825-11	s	FILTER, CHIP EMI
FL35	1-239-825-11	s	FILTER, CHIP EMI
FL36	1-239-825-11	s	FILTER, CHIP EMI
FL37	1-239-825-11	s	FILTER, CHIP EMI
FL38	1-239-719-11	s	FILTER, CHIP EMI
FL39	1-239-825-11	s	FILTER, CHIP EMI
FL40	1-239-719-11	s	FILTER, CHIP EMI
FL41	1-239-719-11	s	FILTER, CHIP EMI
FL42	1-239-719-11	s	FILTER, CHIP EMI
FL43	1-239-825-11	s	FILTER, CHIP EMI
FL44	1-239-825-11	s	FILTER, CHIP EMI

CN-1121 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-8272-550-A	o	MOUNTED CIRCUIT BOAAD, CN-1121
CN101	1-569-531-11	s	HOUSING, 20P
CN102	1-569-532-11	s	HOUSING, 30P
FL1	1-239-719-11	s	FILTER, CHIP EMI
FL2	1-239-719-11	s	FILTER, CHIP EMI
FL3	1-239-719-11	s	FILTER, CHIP EMI
FL4	1-239-719-11	s	FILTER, CHIP EMI
FL5	1-239-719-11	s	FILTER, CHIP EMI
FL6	1-239-719-11	s	FILTER, CHIP EMI
FL7	1-239-719-11	s	FILTER, CHIP EMI
FL8	1-239-719-11	s	FILTER, CHIP EMI
FL9	1-239-719-11	s	FILTER, CHIP EMI
FL10	1-239-719-11	s	FILTER, CHIP EMI
FL11	1-239-719-11	s	FILTER, CHIP EMI
FL12	1-239-719-11	s	FILTER, CHIP EMI
FL13	1-239-719-11	s	FILTER, CHIP EMI
FL14	1-239-719-11	s	FILTER, CHIP EMI
FL15	1-239-719-11	s	FILTER, CHIP EMI
FL16	1-239-719-11	s	FILTER, CHIP EMI
FL17	1-239-719-11	s	FILTER, CHIP EMI
FL18	1-239-719-11	s	FILTER, CHIP EMI
FL19	1-239-719-11	s	FILTER, CHIP EMI
FL20	1-239-719-11	s	FILTER, CHIP EMI
FL21	1-239-719-11	s	FILTER, CHIP EMI
FL22	1-239-719-11	s	FILTER, CHIP EMI
FL23	1-239-719-11	s	FILTER, CHIP EMI
FL24	1-239-719-11	s	FILTER, CHIP EMI
FL25	1-239-719-11	s	FILTER, CHIP EMI
FL26	1-239-719-11	s	FILTER, CHIP EMI
FL27	1-239-719-11	s	FILTER, CHIP EMI
FL28	1-239-719-11	s	FILTER, CHIP EMI
FL30	1-239-719-11	s	FILTER, CHIP EMI
FL31	1-239-719-11	s	FILTER, CHIP EMI
FL32	1-239-719-11	s	FILTER, CHIP EMI
FL33	1-239-719-11	s	FILTER, CHIP EMI
FL34	1-239-719-11	s	FILTER, CHIP EMI
FL35	1-239-719-11	s	FILTER, CHIP EMI
FL37	1-239-825-11	s	FILTER, CHIP EMI
FL38	1-239-719-11	s	FILTER, CHIP EMI
FL39	1-239-719-11	s	FILTER, CHIP EMI
R1	1-216-295-11	s	CHIP, CONDUCTOR 0
R2	1-216-295-11	s	CHIP, CONDUCTOR 0

CN-1122 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	1-657-447-21	o	PRINTED CIRCUIT BOARD, CN-1122
C1	1-128-592-11	s	ELECT 0.33uF 20% 50V
C2	1-128-592-11	s	ELECT 0.33uF 20% 50V
C5	1-126-968-11	s	CHIP, ELECT 100uF 20% 50V
CN401	1-569-629-11	s	HOUSING, 24P
CN402	1-695-890-21	o	PIN, CONNECTOR (PC BOARD) 12P
CN405	1-764-082-21	s	PIN, CONNECTOR (PC BOARD) 11P
CN406	1-764-078-11	s	PIN, CONNECTOR (PC BOARD) 3P
CN407	1-695-207-21	o	PIN, CONNECTOR (PC BOARD) 6P
R1	1-218-708-11	s	METAL 4.7K 0.50% 1/16W
R2	1-218-708-11	s	METAL 4.7K 0.50% 1/16W
R3	1-215-421-00	s	METAL 1K 1% 1/6W

CN-1142 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-8272-559-A	o	MOUNTED CIRCUIT BOARD, CN-1142

CN-1504 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-8315-489-A	o	MOUNTED CIRCUIT BOARD, CN-1504
CN1	1-774-261-11	o	CONNECTOR, FFC 24P
CN2	1-774-261-11	o	CONNECTOR, FFC 24P
CN3	1-774-260-11	o	CONNECTOR, FFC 20P
CN4	1-774-260-11	o	CONNECTOR, FFC 20P

DA-88 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-8272-566-A	o	MOUNTED CIRCUIT BOARD, DA-88
1pc	3-692-128-02	o	PANEL,DA-88 PC BOARD
1pc	3-724-753-01	o	RING
6pcs	3-729-061-01	s	SCREW (M2X4.5) (TYPE 1)
C1	1-135-215-21	s	TANTALUM, CHIP 6.8uF 20% 16V
C2	1-135-160-21	s	CHIP, TANTALUM 15uF 10% 16V
C3	1-164-156-11	s	CERAMIC 0.1uF 25V
C4	1-164-156-11	s	CERAMIC 0.1uF 25V
C5	1-135-177-21	s	TANTALUM, CHIP 1uF 10% 25V
C6	1-135-160-21	s	CHIP, TANTALUM 15uF 10% 16V
C7	1-164-156-11	s	CERAMIC 0.1uF 25V
C8	1-162-923-11	s	CERAMIC, CHIP 47PF 5% 50V
C9	1-165-176-11	s	CERAMIC, CHIP 0.047uF 10% 16V
C10	1-135-160-21	s	CHIP, TANTALUM 15uF 10% 16V
C11	1-164-156-11	s	CERAMIC 0.1uF 25V
C12	1-164-156-11	s	CERAMIC 0.1uF 25V
C13	1-135-177-21	s	TANTALUM, CHIP 1uF 10% 25V
C14	1-135-160-21	s	CHIP, TANTALUM 15uF 10% 16V
C15	1-164-156-11	s	CERAMIC 0.1uF 25V
C16	1-135-216-11	s	TANTALUM, CHIP 10uF 20% 10V
C17	1-135-216-11	s	TANTALUM, CHIP 10uF 20% 10V
C18	1-164-156-11	s	CERAMIC 0.1uF 25V
C19	1-164-156-11	s	CERAMIC 0.1uF 25V
C20	1-135-177-21	s	TANTALUM, CHIP 1uF 10% 25V
C21	1-162-915-11	s	CERAMIC, CHIP 10PF 5PF 50V
C23	1-164-156-11	s	CERAMIC 0.1uF 25V
C24	1-164-156-11	s	CERAMIC 0.1uF 25V
C25	1-135-215-21	s	TANTALUM, CHIP 6.8uF 20% 16V
C26	1-135-216-11	s	TANTALUM, CHIP 10uF 20% 10V
C27	1-135-216-11	s	TANTALUM, CHIP 10uF 20% 10V
C28	1-135-216-11	s	TANTALUM, CHIP 10uF 20% 10V
C29	1-164-156-11	s	CERAMIC 0.1uF 25V
C30	1-164-156-11	s	CERAMIC 0.1uF 25V
C31	1-164-156-11	s	CERAMIC 0.1uF 25V
C32	1-164-156-11	s	CERAMIC 0.1uF 25V
C33	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C34	1-135-216-11	s	TANTALUM, CHIP 10uF 20% 10V
C35	1-164-156-11	s	CERAMIC 0.1uF 25V
C36	1-164-156-11	s	CERAMIC 0.1uF 25V
C37	1-164-156-11	s	CERAMIC 0.1uF 25V
C38	1-164-156-11	s	CERAMIC 0.1uF 25V
C39	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C40	1-135-160-21	s	CHIP, TANTALUM 15uF 10% 16V
C41	1-164-156-11	s	CERAMIC 0.1uF 25V
C42	1-164-156-11	s	CERAMIC 0.1uF 25V
C43	1-164-156-11	s	CERAMIC 0.1uF 25V
C44	1-164-156-11	s	CERAMIC 0.1uF 25V
C45	1-162-919-11	s	CERAMIC, CHIP 22PF 5% 50V
C46	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C47	1-164-156-11	s	CERAMIC 0.1uF 25V
C48	1-162-913-11	s	CERAMIC 8PF 0.5PF 50V
C49	1-162-907-11	s	CERAMIC, CHIP 2PF 50V
C50	1-164-156-11	s	CERAMIC 0.1uF 25V
C51	1-164-156-11	s	CERAMIC 0.1uF 25V
C52	1-164-156-11	s	CERAMIC 0.1uF 25V
C53	1-164-156-11	s	CERAMIC 0.1uF 25V
C54	1-135-215-21	s	TANTALUM, CHIP 6.8uF 20% 16V
C55	1-135-177-21	s	TANTALUM, CHIP 1uF 10% 25V
C56	1-135-177-21	s	TANTALUM, CHIP 1uF 10% 25V

(DA-88 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
C57	1-135-177-21	s	TANTALUM, CHIP 1uF 10% 25V
C58	1-135-177-21	s	TANTALUM, CHIP 1uF 10% 25V
C59	1-164-315-11	s	CERAMIC 470PF 5% 50V
C61	1-135-216-11	s	TANTALUM, CHIP 10uF 20% 10V
C64	1-162-905-11	s	CERAMIC 1PF 0.25PF 50V
C65	1-162-915-11	s	CERAMIC, CHIP 10PF 5PF 50V
C66	1-162-921-11	s	CERAMIC, CHIP 33PF 5% 50V
C67	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C68	1-164-156-11	s	CERAMIC 0.1uF 25V
C69	1-164-156-11	s	CERAMIC 0.1uF 25V
C70	1-162-913-11	s	CERAMIC 8PF 0.5PF 50V
C71	1-162-907-11	s	CERAMIC, CHIP 2PF 50V
C72	1-164-156-11	s	CERAMIC 0.1uF 25V
C73	1-164-156-11	s	CERAMIC 0.1uF 25V
C74	1-164-156-11	s	CERAMIC 0.1uF 25V
C75	1-164-156-11	s	CERAMIC 0.1uF 25V
C76	1-135-162-21	s	TANTALUM, CHIP 33uF 10% 6.3V
C77	1-135-215-21	s	TANTALUM, CHIP 6.8uF 20% 16V
C81	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C82	1-164-156-11	s	CERAMIC 0.1uF 25V
C83	1-135-215-21	s	TANTALUM, CHIP 6.8uF 20% 16V
C84	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C85	1-162-918-11	s	CERAMIC, CHIP 18PF 5% 50V
C87	1-162-905-11	s	CERAMIC 1PF 0.25PF 50V
C88	1-162-921-11	s	CERAMIC, CHIP 33PF 5% 50V
C89	1-162-919-11	s	CERAMIC, CHIP 22PF 5% 50V
C90	1-162-911-11	s	CERAMIC, CHIP 6PF 50V
C92	1-164-156-11	s	CERAMIC 0.1uF 25V
C93	1-135-160-21	s	CHIP, TANTALUM 15uF 10% 16V
C95	1-164-156-11	s	CERAMIC 0.1uF 25V
C96	1-164-156-11	s	CERAMIC 0.1uF 25V
C97	1-164-156-11	s	CERAMIC 0.1uF 25V
C98	1-164-156-11	s	CERAMIC 0.1uF 25V
C99	1-135-215-21	s	TANTALUM, CHIP 6.8uF 20% 16V
C100	1-162-907-11	s	CERAMIC, CHIP 2PF 50V
C101	1-135-177-21	s	TANTALUM, CHIP 1uF 10% 25V
C102	1-135-177-21	s	TANTALUM, CHIP 1uF 10% 25V
C103	1-135-177-21	s	TANTALUM, CHIP 1uF 10% 25V
C104	1-135-177-21	s	TANTALUM, CHIP 1uF 10% 25V
C105	1-164-315-11	s	CERAMIC 470PF 5% 50V
C106	1-164-156-11	s	CERAMIC 0.1uF 25V
C107	1-135-215-21	s	TANTALUM, CHIP 6.8uF 20% 16V
C109	1-164-156-11	s	CERAMIC 0.1uF 25V
C110	1-135-160-21	s	CHIP, TANTALUM 15uF 10% 16V
C113	1-162-905-11	s	CERAMIC 1PF 0.25PF 50V
C114	1-162-915-11	s	CERAMIC, CHIP 10PF 5PF 50V
C115	1-162-927-11	s	CERAMIC, CHIP 100PF 5% 50V
C118	1-164-156-11	s	CERAMIC 0.1uF 25V
C119	1-164-156-11	s	CERAMIC 0.1uF 25V
C120	1-164-156-11	s	CERAMIC 0.1uF 25V
C121	1-164-156-11	s	CERAMIC 0.1uF 25V
C122	1-135-215-21	s	TANTALUM, CHIP 6.8uF 20% 16V
C123	1-162-907-11	s	CERAMIC, CHIP 2PF 50V
C124	1-135-177-21	s	TANTALUM, CHIP 1uF 10% 25V
C125	1-135-177-21	s	TANTALUM, CHIP 1uF 10% 25V
C126	1-135-177-21	s	TANTALUM, CHIP 1uF 10% 25V
C127	1-135-177-21	s	TANTALUM, CHIP 1uF 10% 25V
C128	1-164-156-11	s	CERAMIC 0.1uF 25V
C129	1-135-215-21	s	TANTALUM, CHIP 6.8uF 20% 16V

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Ref. No. or Q'ty	Part No.	SP	Description
C132	1-162-905-11	s	CERAMIC 1PF 0.25PF 50V
C133	1-162-915-11	s	CERAMIC, CHIP 10PF 5PF 50V
C134	1-162-921-11	s	CERAMIC, CHIP 33PF 5% 50V
C136	1-162-915-11	s	CERAMIC, CHIP 10PF 5PF 50V
C137	1-162-921-11	s	CERAMIC, CHIP 33PF 5% 50V
C138	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C140	1-164-156-11	s	CERAMIC 0.1uF 25V
C141	1-164-156-11	s	CERAMIC 0.1uF 25V
C142	1-164-156-11	s	CERAMIC 0.1uF 25V
C143	1-164-156-11	s	CERAMIC 0.1uF 25V
C144	1-135-215-21	s	TANTALUM, CHIP 6.8uF 20% 16V
C145	1-162-907-11	s	CERAMIC, CHIP 2PF 50V
C146	1-135-177-21	s	TANTALUM, CHIP 1uF 10% 25V
C147	1-135-177-21	s	TANTALUM, CHIP 1uF 10% 25V
C148	1-135-177-21	s	TANTALUM, CHIP 1uF 10% 25V
C149	1-135-177-21	s	TANTALUM, CHIP 1uF 10% 25V
C150	1-164-156-11	s	CERAMIC 0.1uF 25V
C151	1-135-215-21	s	TANTALUM, CHIP 6.8uF 20% 16V
C154	1-162-905-11	s	CERAMIC 1PF 0.25PF 50V
C155	1-162-915-11	s	CERAMIC, CHIP 10PF 5PF 50V
C166	1-135-216-11	s	TANTALUM, CHIP 10uF 20% 10V
C167	1-164-156-11	s	CERAMIC 0.1uF 25V
C169	1-135-215-21	s	TANTALUM, CHIP 6.8uF 20% 16V
C170	1-135-215-21	s	TANTALUM, CHIP 6.8uF 20% 16V
C171	1-135-215-21	s	TANTALUM, CHIP 6.8uF 20% 16V
C172	1-135-215-21	s	TANTALUM, CHIP 6.8uF 20% 16V
C200	1-164-156-11	s	CERAMIC 0.1uF 25V
C201	1-164-156-11	s	CERAMIC 0.1uF 25V
C202	1-135-215-21	s	TANTALUM, CHIP 6.8uF 20% 16V
C203	1-162-907-11	s	CERAMIC, CHIP 2PF 50V
C204	1-164-156-11	s	CERAMIC 0.1uF 25V
C205	1-162-907-11	s	CERAMIC, CHIP 2PF 50V
C206	1-135-215-21	s	TANTALUM, CHIP 6.8uF 20% 16V
C207	1-164-156-11	s	CERAMIC 0.1uF 25V
C208	1-135-215-21	s	TANTALUM, CHIP 6.8uF 20% 16V
C209	1-164-156-11	s	CERAMIC 0.1uF 25V
C210	1-135-215-21	s	TANTALUM, CHIP 6.8uF 20% 16V
C211	1-164-156-11	s	CERAMIC 0.1uF 25V
C213	1-162-909-11	s	CERAMIC 4PF 0.25PF 50V
C214	1-164-156-11	s	CERAMIC 0.1uF 25V
C215	1-135-215-21	s	TANTALUM, CHIP 6.8uF 20% 16V
C216	1-164-156-11	s	CERAMIC 0.1uF 25V
C217	1-135-215-21	s	TANTALUM, CHIP 6.8uF 20% 16V
C218	1-164-156-11	s	CERAMIC 0.1uF 25V
C219	1-164-156-11	s	CERAMIC 0.1uF 25V
C220	1-164-156-11	s	CERAMIC 0.1uF 25V
C221	1-164-156-11	s	CERAMIC 0.1uF 25V
C222	1-164-156-11	s	CERAMIC 0.1uF 25V
C223	1-162-915-11	s	CERAMIC, CHIP 10PF 5PF 50V
C225	1-162-915-11	s	CERAMIC, CHIP 10PF 5PF 50V
C226	1-162-915-11	s	CERAMIC, CHIP 10PF 5PF 50V
C228	1-135-160-21	s	CHIP, TANTALUM 15uF 10% 16V
C229	1-162-908-11	s	CERAMIC 3PF 0.25PF 50V
C230	1-162-908-11	s	CERAMIC 3PF 0.25PF 50V
C231	1-162-908-11	s	CERAMIC 3PF 0.25PF 50V
C500	1-162-905-11	s	CERAMIC 1PF 0.25PF 50V
D1	8-719-029-63	s	DIODE RD4.3UH-T1
D2	8-719-029-63	s	DIODE RD4.3UH-T1

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Ref. No. or Q'ty	Part No.	SP	Description
D3	8-719-029-63	s	DIODE RD4.3UH-T1
D5	8-719-820-41	s	DIODE 1SS302
D6	8-719-820-41	s	DIODE 1SS302
D7	8-719-820-41	s	DIODE 1SS302
D9	8-719-820-41	s	DIODE 1SS302
D10	8-719-820-41	s	DIODE 1SS302
D11	8-719-820-41	s	DIODE 1SS302
D12	8-719-820-41	s	DIODE 1SS302
D13	8-719-820-41	s	DIODE 1SS302
D14	8-719-820-41	s	DIODE 1SS302
D15	8-719-820-41	s	DIODE 1SS302
D16	8-719-820-41	s	DIODE 1SS302
D17	8-719-820-41	s	DIODE 1SS302
D24	8-719-820-41	s	DIODE 1SS302
D25	8-719-820-41	s	DIODE 1SS302
D26	8-719-820-41	s	DIODE 1SS302
D100	8-719-820-41	s	DIODE 1SS302
D101	8-719-820-41	s	DIODE 1SS302
D102	8-719-820-41	s	DIODE 1SS302
FL1	1-239-754-11	s	FILTER, LOW PASS
FL2	1-239-753-11	s	FILTER, LOW PASS
FL3	1-233-240-21	s	FILTER, LOW PASS
FL4	1-239-753-11	s	FILTER, LOW PASS
FL5	1-233-240-21	s	FILTER, LOW PASS
FL6	1-239-754-11	s	FILTER, LOW PASS
FL7	1-239-754-11	s	FILTER, LOW PASS
FL8	1-239-754-11	s	FILTER, LOW PASS
IC1	8-759-066-68	s	IC REF-03GS
IC2	8-759-076-06	s	IC TL064CPW
IC3	8-759-632-39	s	IC M51958A-T1
IC4	8-752-360-44	s	IC CXK1203AR
IC5	8-752-360-44	s	IC CXK1203AR
IC6	8-752-360-44	s	IC CXK1203AR
IC7	8-752-363-60	s	IC CXD2307R-T4
IC8	8-759-079-46	s	IC TC74VHC00FS(EL)
IC9	8-759-058-54	s	IC TC7S00FU(TE85R)
IC10	8-759-086-42	s	IC X24C02S-3.0-C7000
IC11	8-759-058-58	s	IC TC7S04FU(TE85R)
IC12	8-759-058-62	s	IC TC7S08FU(TE85R)
IC13	8-759-237-79	s	IC TC74HC595AF(EL)
IC14	8-759-064-36	s	IC MB88346BPFV
IC15	8-759-082-61	s	IC TC4W53FU
IC16	8-759-981-48	s	IC TL082M
IC17	8-759-082-61	s	IC TC4W53FU
IC18	8-759-082-61	s	IC TC4W53FU
IC19	8-759-079-85	s	IC TC74VHC244FS(EL)
IC20	8-759-082-61	s	IC TC4W53FU
IC23	8-759-287-54	s	IC TL084CPW-E20
IC24	8-759-082-61	s	IC TC4W53FU
IC25	8-759-089-61	s	IC TC74HC4052AFS(EL)
IC26	8-759-066-59	s	IC TC74HC4053AFS
IC27	8-759-287-54	s	IC TL084CPW-E20
IC28	8-759-089-61	s	IC TC74HC4052AFS(EL)
IC29	8-759-082-61	s	IC TC4W53FU
IC34	8-759-271-86	s	IC TC7SH04FU
IC35	8-759-180-08	s	IC TC74HC4538AFS
IC36	8-759-237-79	s	IC TC74HC595AF(EL)
IC37	8-759-082-59	s	IC TC7W32FU

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Ref. No. or Q'ty	Part No.	SP	Description
IC100	8-759-058-62	s	IC TC7S08FU(TE85R)
IC101	8-759-058-58	s	IC TC7S04FU(TE85R)
IC102	8-759-082-59	s	IC TC7W32FU
IC103	8-759-058-64	s	IC TC7S32FU(TE85R)
IC104	8-759-058-54	s	IC TC7S00FU(TE85R)
IC105	8-759-058-64	s	IC TC7S32FU(TE85R)
IC106	8-759-058-62	s	IC TC7S08FU(TE85R)
IC107	8-759-196-96	s	IC TC7SH08FU-TE85R
IC108	8-759-058-54	s	IC TC7S00FU(TE85R)
IC109	8-759-058-62	s	IC TC7S08FU(TE85R)
IC110	8-759-058-58	s	IC TC7S04FU(TE85R)
JR1	1-216-864-11	s	METAL, CHIP 0 5% 1/16W
JR2	1-216-864-11	s	METAL, CHIP 0 5% 1/16W
JR3	1-216-864-11	s	METAL, CHIP 0 5% 1/16W
JR4	1-216-864-11	s	METAL, CHIP 0 5% 1/16W
L1	1-410-737-31	s	INDUCTOR CHIP 0.47uH
L2	1-410-737-31	s	INDUCTOR CHIP 0.47uH
L3	1-410-737-31	s	INDUCTOR CHIP 0.47uH
L4	1-410-737-31	s	INDUCTOR CHIP 0.47uH
L5	1-410-737-31	s	INDUCTOR CHIP 0.47uH
L6	1-410-737-31	s	INDUCTOR CHIP 0.47uH
L7	1-410-737-31	s	INDUCTOR CHIP 0.47uH
L8	1-410-737-31	s	INDUCTOR CHIP 0.47uH
L9	1-410-385-11	s	INDUCTOR, CHIP 22uH
L10	1-410-385-11	s	INDUCTOR, CHIP 22uH
L11	1-410-385-11	s	INDUCTOR, CHIP 22uH
L12	1-410-392-11	s	INDUCTOR, CHIP 82uH
L13	1-410-737-31	s	INDUCTOR CHIP 0.47uH
L14	1-410-737-31	s	INDUCTOR CHIP 0.47uH
L15	1-410-737-31	s	INDUCTOR CHIP 0.47uH
L16	1-410-737-31	s	INDUCTOR CHIP 0.47uH
L17	1-410-737-31	s	INDUCTOR CHIP 0.47uH
L18	1-410-737-31	s	INDUCTOR CHIP 0.47uH
L19	1-410-737-31	s	INDUCTOR CHIP 0.47uH
L20	1-410-737-31	s	INDUCTOR CHIP 0.47uH
L21	1-410-737-31	s	INDUCTOR CHIP 0.47uH
L22	1-410-737-31	s	INDUCTOR CHIP 0.47uH
L23	1-410-737-31	s	INDUCTOR CHIP 0.47uH
L24	1-410-389-31	s	INDUCTOR CHIP 47uH
L25	1-410-385-11	s	INDUCTOR, CHIP 22uH
Q1	8-729-141-48	s	TRANSISTOR 2SB624-BV345
Q2	8-729-141-75	s	TRANSISTOR 2SD596DV345
Q3	8-729-141-75	s	TRANSISTOR 2SD596DV345
Q4	8-729-117-73	s	TRANSISTOR 2SC4178-F14
Q7	8-729-117-32	s	TRANSISTOR 2SC4177
Q8	8-729-117-16	s	TRANSISTOR 2SA1611-M6
Q9	8-729-117-73	s	TRANSISTOR 2SC4178-F14
Q10	8-729-117-73	s	TRANSISTOR 2SC4178-F14
Q11	8-729-117-73	s	TRANSISTOR 2SC4178-F14
Q12	8-729-117-73	s	TRANSISTOR 2SC4178-F14
Q13	8-729-122-63	s	TRANSISTOR 2SA1226
Q14	8-729-122-63	s	TRANSISTOR 2SA1226
Q15	8-729-122-63	s	TRANSISTOR 2SA1226
Q16	8-729-117-32	s	TRANSISTOR 2SC4177
Q17	8-729-122-63	s	TRANSISTOR 2SA1226
Q18	8-729-142-90	s	TRANSISTOR 2SK853-K5
Q19	8-729-403-32	s	TRANSISTOR XN6534
Q20	8-729-920-48	s	TRANSISTOR IMH2

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Ref. No. or Q'ty	Part No.	SP	Description
Q22	8-729-122-63	s	TRANSISTOR 2SA1226
Q23	8-729-102-08	s	TRANSISTOR 2SC2223-F14
Q25	8-729-117-32	s	TRANSISTOR 2SC4177
Q26	8-729-117-16	s	TRANSISTOR 2SA1611-M6
Q27	8-729-117-73	s	TRANSISTOR 2SC4178-F14
Q28	8-729-117-73	s	TRANSISTOR 2SC4178-F14
Q29	8-729-117-73	s	TRANSISTOR 2SC4178-F14
Q30	8-729-117-73	s	TRANSISTOR 2SC4178-F14
Q32	8-729-122-63	s	TRANSISTOR 2SA1226
Q33	8-729-102-08	s	TRANSISTOR 2SC2223-F14
Q34	8-729-102-08	s	TRANSISTOR 2SC2223-F14
Q43	8-729-403-32	s	TRANSISTOR XN6534
Q44	8-729-102-08	s	TRANSISTOR 2SC2223-F14
Q45	8-729-117-16	s	TRANSISTOR 2SA1611-M6
Q46	8-729-920-48	s	TRANSISTOR IMH2
Q47	8-729-117-32	s	TRANSISTOR 2SC4177
Q48	8-729-117-73	s	TRANSISTOR 2SC4178-F14
Q49	8-729-122-63	s	TRANSISTOR 2SA1226
Q50	8-729-122-63	s	TRANSISTOR 2SA1226
Q51	8-729-122-63	s	TRANSISTOR 2SA1226
Q52	8-729-117-32	s	TRANSISTOR 2SC4177
Q53	8-729-122-63	s	TRANSISTOR 2SA1226
Q54	8-729-142-90	s	TRANSISTOR 2SK853-K5
Q59	8-729-403-32	s	TRANSISTOR XN6534
Q63	8-729-102-08	s	TRANSISTOR 2SC2223-F14
Q67	8-729-117-73	s	TRANSISTOR 2SC4178-F14
Q68	8-729-122-63	s	TRANSISTOR 2SA1226
Q69	8-729-122-63	s	TRANSISTOR 2SA1226
Q70	8-729-117-32	s	TRANSISTOR 2SC4177
Q71	8-729-122-63	s	TRANSISTOR 2SA1226
Q72	8-729-142-90	s	TRANSISTOR 2SK853-K5
Q73	8-729-122-63	s	TRANSISTOR 2SA1226
Q75	8-729-403-32	s	TRANSISTOR XN6534
Q79	8-729-102-08	s	TRANSISTOR 2SC2223-F14
Q83	8-729-117-32	s	TRANSISTOR 2SC4177
Q84	8-729-117-16	s	TRANSISTOR 2SA1611-M6
Q85	8-729-117-73	s	TRANSISTOR 2SC4178-F14
Q86	8-729-122-63	s	TRANSISTOR 2SA1226
Q87	8-729-122-63	s	TRANSISTOR 2SA1226
Q88	8-729-122-63	s	TRANSISTOR 2SA1226
Q89	8-729-117-32	s	TRANSISTOR 2SC4177
Q90	8-729-122-63	s	TRANSISTOR 2SA1226
Q91	8-729-142-90	s	TRANSISTOR 2SK853-K5
Q92	8-729-122-63	s	TRANSISTOR 2SA1226
Q94	8-729-403-32	s	TRANSISTOR XN6534
Q98	8-729-102-08	s	TRANSISTOR 2SC2223-F14
Q100	8-729-403-32	s	TRANSISTOR XN6534
Q101	8-729-102-08	s	TRANSISTOR 2SC2223-F14
Q102	8-729-122-63	s	TRANSISTOR 2SA1226
Q103	8-729-403-32	s	TRANSISTOR XN6534
Q104	8-729-102-08	s	TRANSISTOR 2SC2223-F14
Q105	8-729-029-14	s	TRANSISTOR DTC144EUA-T106
Q106	8-729-029-14	s	TRANSISTOR DTC144EUA-T106
Q107	8-729-102-08	s	TRANSISTOR 2SC2223-F14
Q108	8-729-102-08	s	TRANSISTOR 2SC2223-F14
Q109	8-729-102-08	s	TRANSISTOR 2SC2223-F14
Q110	8-729-102-08	s	TRANSISTOR 2SC2223-F14
Q111	8-729-102-08	s	TRANSISTOR 2SC2223-F14
Q112	8-729-102-08	s	TRANSISTOR 2SC2223-F14

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Ref. No. or Q'ty	Part No.	SP	Description
Q113	8-729-102-08	s	TRANSISTOR 2SC2223-F14
Q114	8-729-102-08	s	TRANSISTOR 2SC2223-F14
Q115	8-729-102-08	s	TRANSISTOR 2SC2223-F14
Q117	8-729-122-63	s	TRANSISTOR 2SA1226
R1	1-216-864-11	s	METAL, CHIP 0 5% 1/16W
R2	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R3	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R4	1-218-677-11	s	CHIP, METAL 240 0.50% 1/16W
R5	1-218-723-11	s	METAL 20K 0.50% 1/16W
R6	1-218-724-11	s	CHIP, METAL 22K 5% 1/16W
R7	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R8	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R9	1-216-864-11	s	METAL, CHIP 0 5% 1/16W
R10	1-218-724-11	s	CHIP, METAL 22K 5% 1/16W
R11	1-218-724-11	s	CHIP, METAL 22K 5% 1/16W
R12	1-218-729-11	s	CHIP, METAL 36K 0.50% 1/16W
R13	1-216-864-11	s	METAL, CHIP 0 5% 1/16W
R14	1-218-723-11	s	METAL 20K 0.50% 1/16W
R15	1-216-805-11	s	METAL, CHIP 47 5% 1/16W
R16	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R17	1-218-676-11	s	METAL 220 0.50% 1/16W
R18	1-218-698-11	s	METAL 1.8K 0.50% 1/16W
R19	1-218-676-11	s	METAL 220 0.50% 1/16W
R20	1-216-805-11	s	METAL, CHIP 47 5% 1/16W
R21	1-218-704-11	s	METAL 3.3K 0.50% 1/16W
R22	1-216-805-11	s	METAL, CHIP 47 5% 1/16W
R23	1-220-158-91	s	CHIP,METAL 3.6K 5% 1/16W
R24	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R25	1-216-832-11	s	METAL, CHIP 8.2K 5% 1/16W
R26	1-216-803-11	s	METAL, CHIP 33 5% 1/16W
R27	1-216-864-11	s	METAL, CHIP 0 5% 1/16W
R33	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R34	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R35	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R36	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R37	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R38	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R39	1-218-676-11	s	METAL 220 0.50% 1/16W
R40	1-218-676-11	s	METAL 220 0.50% 1/16W
R41	1-218-676-11	s	METAL 220 0.50% 1/16W
R42	1-218-704-11	s	METAL 3.3K 0.50% 1/16W
R43	1-218-704-11	s	METAL 3.3K 0.50% 1/16W
R44	1-218-704-11	s	METAL 3.3K 0.50% 1/16W
R45	1-218-883-11	s	METAL 33K 0.50% 1/16W
R46	1-218-724-11	s	CHIP, METAL 22K 5% 1/16W
R47	1-218-730-11	s	CHIP, METAL 39K 0.50% 1/16W
R48	1-218-883-11	s	METAL 33K 0.50% 1/16W
R49	1-218-724-11	s	CHIP, METAL 22K 5% 1/16W
R50	1-218-730-11	s	CHIP, METAL 39K 0.50% 1/16W
R51	1-218-883-11	s	METAL 33K 0.50% 1/16W
R52	1-218-724-11	s	CHIP, METAL 22K 5% 1/16W
R53	1-218-730-11	s	CHIP, METAL 39K 0.50% 1/16W
R54	1-216-797-11	s	METAL, CHIP 10 5% 1/16W
R56	1-216-857-11	s	METAL, CHIP 1M 5% 1/16W
R57	1-218-676-11	s	METAL 220 0.50% 1/16W
R58	1-218-692-11	s	CHIP, METAL 1K 0.50% 1/16W
R59	1-216-805-11	s	METAL, CHIP 47 5% 1/16W
R60	1-216-805-11	s	METAL, CHIP 47 5% 1/16W
R61	1-216-829-11	s	METAL, CHIP 4.7K 5% 1/16W
R62	1-216-829-11	s	METAL, CHIP 4.7K 5% 1/16W

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Ref. No. or Q'ty	Part No.	SP	Description
R63	1-218-692-11	s	CHIP, METAL 1K 0.50% 1/16W
R64	1-218-708-11	s	METAL 4.7K 0.50% 1/16W
R65	1-218-692-11	s	CHIP, METAL 1K 0.50% 1/16W
R66	1-216-805-11	s	METAL, CHIP 47 5% 1/16W
R67	1-218-708-11	s	METAL 4.7K 0.50% 1/16W
R68	1-218-692-11	s	CHIP, METAL 1K 0.50% 1/16W
R69	1-216-805-11	s	METAL, CHIP 47 5% 1/16W
R70	1-220-158-91	s	CHIP,METAL 3.6K 5% 1/16W
R71	1-220-158-91	s	CHIP,METAL 3.6K 5% 1/16W
R72	1-216-805-11	s	METAL, CHIP 47 5% 1/16W
R73	1-216-829-11	s	METAL, CHIP 4.7K 5% 1/16W
R74	1-218-856-11	s	CHIP, METAL 2.4K 0.50% 1/16W
R75	1-218-710-11	s	CHIP, METAL 5.6K 0.50% 1/16W
R76	1-218-708-11	s	METAL 4.7K 0.50% 1/16W
R77	1-218-705-11	s	METAL 3.6K 0.50% 1/16W
R78	1-218-700-11	s	METAL 2.2K 0.50% 1/16W
R79	1-218-705-11	s	METAL 3.6K 0.50% 1/16W
R80	1-218-708-11	s	METAL 4.7K 0.50% 1/16W
R81	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R82	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R83	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R84	1-218-708-11	s	METAL 4.7K 0.50% 1/16W
R85	1-218-724-11	s	CHIP, METAL 22K 5% 1/16W
R87	1-218-702-11	s	CHIP, METAL 2.7K 0.50% 1/16W
R88	1-218-724-11	s	CHIP, METAL 22K 5% 1/16W
R89	1-218-706-11	s	METAL 3.9K 0.50% 1/16W
R90	1-218-710-11	s	CHIP, METAL 5.6K 0.50% 1/16W
R91	1-218-700-11	s	METAL 2.2K 0.50% 1/16W
R92	1-216-837-11	s	METAL, CHIP 22K 5% 1/16W
R93	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R94	1-218-708-11	s	METAL 4.7K 0.50% 1/16W
R95	1-218-858-11	s	CHIP, METAL 3K 0.50% 1/16W
R96	1-218-699-11	s	CHIP, METAL 2K 0.50% 1/16W
R97	1-218-668-11	s	CHIP, METAL 100 0.50% 1/16W
R98	1-218-668-11	s	CHIP, METAL 100 0.50% 1/16W
R99	1-216-825-11	s	METAL, CHIP 2.2K 5% 1/16W
R100	1-216-830-11	s	METAL, CHIP 5.6K 5% 1/16W
R101	1-218-720-11	s	METAL 15K 0.50% 1/16W
R102	1-218-716-11	s	METAL 10K 0.50% 1/16W
R103	1-218-725-11	s	METAL 24K 0.50% 1/16W
R105	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R106	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R107	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R108	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R110	1-216-805-11	s	METAL, CHIP 47 5% 1/16W
R111	1-216-805-11	s	METAL, CHIP 47 5% 1/16W
R112	1-216-829-11	s	METAL, CHIP 4.7K 5% 1/16W
R113	1-216-829-11	s	METAL, CHIP 4.7K 5% 1/16W
R114	1-218-692-11	s	CHIP, METAL 1K 0.50% 1/16W
R115	1-218-708-11	s	METAL 4.7K 0.50% 1/16W
R116	1-218-692-11	s	CHIP, METAL 1K 0.50% 1/16W
R117	1-218-708-11	s	METAL 4.7K 0.50% 1/16W
R118	1-218-846-11	s	CHIP, METAL 910 0.50% 1/16W
R119	1-218-692-11	s	CHIP, METAL 1K 0.50% 1/16W
R120	1-216-805-11	s	METAL, CHIP 47 5% 1/16W
R121	1-216-805-11	s	METAL, CHIP 47 5% 1/16W
R122	1-220-158-91	s	CHIP,METAL 3.6K 5% 1/16W
R123	1-220-158-91	s	CHIP,METAL 3.6K 5% 1/16W
R124	1-216-805-11	s	METAL, CHIP 47 5% 1/16W

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Ref. No. or Q'ty	Part No.	SP	Description
R127	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R128	1-216-832-11	s	METAL, CHIP 8.2K 5% 1/16W
R129	1-216-830-11	s	METAL, CHIP 5.6K 5% 1/16W
R130	1-216-832-11	s	METAL, CHIP 8.2K 5% 1/16W
R131	1-216-829-11	s	METAL, CHIP 4.7K 5% 1/16W
R135	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R136	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R137	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R142	1-218-708-11	s	METAL 4.7K 0.50% 1/16W
R145	1-216-864-11	s	METAL, CHIP 0 5% 1/16W
R146	1-218-676-11	s	METAL 220 0.50% 1/16W
R147	1-218-710-11	s	CHIP, METAL 5.6K 0.50% 1/16W
R148	1-218-706-11	s	METAL 3.9K 0.50% 1/16W
R149	1-218-694-11	s	CHIP, METAL 1.2K 0.50% 1/16W
R150	1-218-700-11	s	METAL 2.2K 0.50% 1/16W
R151	1-218-702-11	s	CHIP, METAL 2.7K 0.50% 1/16W
R152	1-218-692-11	s	CHIP, METAL 1K 0.50% 1/16W
R153	1-218-700-11	s	METAL 2.2K 0.50% 1/16W
R154	1-218-700-11	s	METAL 2.2K 0.50% 1/16W
R155	1-211-990-11	s	CHIP, METAL 75 0.50% 1/16W
R156	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R157	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R158	1-216-864-11	s	METAL, CHIP 0 5% 1/16W
R159	1-218-698-11	s	METAL 1.8K 0.50% 1/16W
R160	1-218-676-11	s	METAL 220 0.50% 1/16W
R161	1-220-158-91	s	CHIP,METAL 3.6K 5% 1/16W
R162	1-216-805-11	s	METAL, CHIP 47 5% 1/16W
R163	1-216-829-11	s	METAL, CHIP 4.7K 5% 1/16W
R164	1-218-672-11	s	METAL 150 0.50% 1/16W
R165	1-218-710-11	s	CHIP, METAL 5.6K 0.50% 1/16W
R166	1-218-708-11	s	METAL 4.7K 0.50% 1/16W
R167	1-218-705-11	s	METAL 3.6K 0.50% 1/16W
R168	1-218-700-11	s	METAL 2.2K 0.50% 1/16W
R169	1-218-858-11	s	CHIP, METAL 3K 0.50% 1/16W
R170	1-218-705-11	s	METAL 3.6K 0.50% 1/16W
R171	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R172	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R173	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R174	1-218-708-11	s	METAL 4.7K 0.50% 1/16W
R175	1-218-724-11	s	CHIP, METAL 22K 5% 1/16W
R177	1-218-867-11	s	CHIP, METAL 6.8K 0.50% 1/16W
R178	1-218-724-11	s	CHIP, METAL 22K 5% 1/16W
R184	1-218-828-11	s	METAL 160 0.50% 1/16W
R185	1-218-648-11	s	METAL 15 0.50% 1/16W
R186	1-218-661-11	s	CHIP, METAL 51 0.50% 1/16W
R187	1-211-990-11	s	CHIP, METAL 75 0.50% 1/16W
R188	1-218-702-11	s	CHIP, METAL 2.7K 0.50% 1/16W
R190	1-216-829-11	s	METAL, CHIP 4.7K 5% 1/16W
R191	1-218-700-11	s	METAL 2.2K 0.50% 1/16W
R192	1-218-710-11	s	CHIP, METAL 5.6K 0.50% 1/16W
R193	1-218-706-11	s	METAL 3.9K 0.50% 1/16W
R194	1-218-700-11	s	METAL 2.2K 0.50% 1/16W
R195	1-218-702-11	s	CHIP, METAL 2.7K 0.50% 1/16W
R196	1-218-720-11	s	METAL 15K 0.50% 1/16W
R197	1-218-740-11	s	METAL 100K 0.50% 1/16W
R198	1-218-858-11	s	CHIP, METAL 3K 0.50% 1/16W
R199	1-211-990-11	s	CHIP, METAL 75 0.50% 1/16W
R200	1-218-668-11	s	CHIP, METAL 100 0.50% 1/16W
R201	1-218-720-11	s	CHIP, METAL 15K 0.50% 1/16W

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Ref. No. or Q'ty	Part No.	SP	Description
R202	1-218-720-11	s	CHIP, METAL 15K 0.50% 1/16W
R205	1-218-699-11	s	CHIP, METAL 2K 0.50% 1/16W
R206	1-218-732-11	s	METAL 47K 0.50% 1/16W
R207	1-218-725-11	s	METAL 24K 0.50% 1/16W
R208	1-216-864-11	s	METAL, CHIP 0 5% 1/16W
R209	1-218-698-11	s	METAL 1.8K 0.50% 1/16W
R210	1-218-676-11	s	METAL 220 0.50% 1/16W
R211	1-220-158-91	s	CHIP,METAL 3.6K 5% 1/16W
R212	1-216-805-11	s	METAL, CHIP 47 5% 1/16W
R213	1-216-829-11	s	METAL, CHIP 4.7K 5% 1/16W
R214	1-216-864-11	s	METAL, CHIP 0 5% 1/16W
R215	1-218-710-11	s	CHIP, METAL 5.6K 0.50% 1/16W
R216	1-218-708-11	s	METAL 4.7K 0.50% 1/16W
R217	1-218-705-11	s	METAL 3.6K 0.50% 1/16W
R218	1-218-700-11	s	METAL 2.2K 0.50% 1/16W
R219	1-218-858-11	s	CHIP, METAL 3K 0.50% 1/16W
R220	1-218-705-11	s	METAL 3.6K 0.50% 1/16W
R221	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R222	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R223	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R224	1-218-841-11	s	CHIP, METAL 560 0.50% 1/16W
R225	1-218-697-11	s	METAL 1.6K 0.50% 1/16W
R226	1-218-672-11	s	METAL 150 0.50% 1/16W
R227	1-218-864-11	s	CHIP, METAL 5.1K 0.50% 1/16W
R228	1-218-675-11	s	CHIP, METAL 200 0.50% 1/16W
R229	1-216-829-11	s	METAL, CHIP 4.7K 5% 1/16W
R231	1-218-829-11	s	CHIP, METAL 180 0.50% 1/16W
R232	1-218-867-11	s	CHIP, METAL 6.8K 0.50% 1/16W
R233	1-218-706-11	s	METAL 3.9K 0.50% 1/16W
R234	1-218-710-11	s	CHIP, METAL 5.6K 0.50% 1/16W
R235	1-218-700-11	s	METAL 2.2K 0.50% 1/16W
R236	1-218-702-11	s	CHIP, METAL 2.7K 0.50% 1/16W
R239	1-218-858-11	s	CHIP, METAL 3K 0.50% 1/16W
R240	1-211-990-11	s	CHIP, METAL 75 0.50% 1/16W
R241	1-218-668-11	s	CHIP, METAL 100 0.50% 1/16W
R242	1-218-668-11	s	CHIP, METAL 100 0.50% 1/16W
R243	1-218-668-11	s	CHIP, METAL 100 0.50% 1/16W
R244	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R246	1-218-729-11	s	CHIP, METAL 36K 0.50% 1/16W
R247	1-218-724-11	s	CHIP, METAL 22K 5% 1/16W
R248	1-218-732-11	s	METAL 47K 0.50% 1/16W
R249	1-218-699-11	s	CHIP, METAL 2K 0.50% 1/16W
R250	1-218-668-11	s	CHIP, METAL 100 0.50% 1/16W
R251	1-218-668-11	s	CHIP, METAL 100 0.50% 1/16W
R252	1-216-825-11	s	METAL, CHIP 2.2K 5% 1/16W
R253	1-216-830-11	s	METAL, CHIP 5.6K 5% 1/16W
R254	1-218-873-11	s	CHIP, METAL 12K 0.50% 1/16W
R255	1-218-716-11	s	METAL 10K 0.50% 1/16W
R256	1-218-725-11	s	METAL 24K 0.50% 1/16W
R257	1-216-864-11	s	METAL, CHIP 0 5% 1/16W
R258	1-218-698-11	s	METAL 1.8K 0.50% 1/16W
R259	1-218-676-11	s	METAL 220 0.50% 1/16W
R260	1-220-158-91	s	CHIP,METAL 3.6K 5% 1/16W
R261	1-216-805-11	s	METAL, CHIP 47 5% 1/16W
R262	1-216-829-11	s	METAL, CHIP 4.7K 5% 1/16W
R263	1-216-864-11	s	METAL, CHIP 0 5% 1/16W
R264	1-218-710-11	s	CHIP, METAL 5.6K 0.50% 1/16W
R265	1-218-708-11	s	METAL 4.7K 0.50% 1/16W
R266	1-218-705-11	s	METAL 3.6K 0.50% 1/16W

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Ref. No. or Q'ty	Part No.	SP	Description
R267	1-218-700-11	s	METAL 2.2K 0.50% 1/16W
R268	1-218-858-11	s	CHIP, METAL 3K 0.50% 1/16W
R269	1-218-705-11	s	METAL 3.6K 0.50% 1/16W
R270	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R271	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R272	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R273	1-218-841-11	s	CHIP, METAL 560 0.50% 1/16W
R274	1-218-697-11	s	METAL 1.6K 0.50% 1/16W
R275	1-218-672-11	s	METAL 150 0.50% 1/16W
R276	1-218-864-11	s	CHIP, METAL 5.1K 0.50% 1/16W
R277	1-218-675-11	s	CHIP, METAL 200 0.50% 1/16W
R278	1-216-829-11	s	METAL, CHIP 4.7K 5% 1/16W
R280	1-218-672-11	s	METAL 150 0.50% 1/16W
R281	1-218-867-11	s	CHIP, METAL 6.8K 0.50% 1/16W
R282	1-218-706-11	s	METAL 3.9K 0.50% 1/16W
R283	1-218-710-11	s	CHIP, METAL 5.6K 0.50% 1/16W
R284	1-218-700-11	s	METAL 2.2K 0.50% 1/16W
R285	1-218-702-11	s	CHIP, METAL 2.7K 0.50% 1/16W
R288	1-218-858-11	s	CHIP, METAL 3K 0.50% 1/16W
R289	1-211-990-11	s	CHIP, METAL 75 0.50% 1/16W
R290	1-218-668-11	s	CHIP, METAL 100 0.50% 1/16W
R293	1-218-714-11	s	METAL 8.2K 0.50% 1/16W
R294	1-218-724-11	s	CHIP, METAL 22K 5% 1/16W
R295	1-218-732-11	s	METAL 47K 0.50% 1/16W
R300	1-218-868-11	s	CHIP, METAL 7.5K 0.50% 1/16W
R301	1-218-698-11	s	METAL 1.8K 0.50% 1/16W
R302	1-218-708-11	s	METAL 4.7K 0.50% 1/16W
R303	1-218-851-11	s	CHIP, METAL 1.5K 0.50% 1/16W
R304	1-218-675-11	s	CHIP, METAL 200 0.50% 1/16W
R305	1-218-725-11	s	METAL 24K 0.50% 1/16W
R306	1-216-832-11	s	METAL, CHIP 8.2K 5% 1/16W
R307	1-218-868-11	s	CHIP, METAL 7.5K 0.50% 1/16W
R308	1-218-698-11	s	METAL 1.8K 0.50% 1/16W
R309	1-218-706-11	s	METAL 3.9K 0.50% 1/16W
R310	1-216-826-11	s	METAL, CHIP 2.7K 5% 1/16W
R311	1-216-864-11	s	METAL, CHIP 0 5% 1/16W
R312	1-218-704-11	s	METAL 3.3K 0.50% 1/16W
R313	1-216-829-11	s	METAL, CHIP 4.7K 5% 1/16W
R314	1-216-829-11	s	METAL, CHIP 4.7K 5% 1/16W
R315	1-216-829-11	s	METAL, CHIP 4.7K 5% 1/16W
R316	1-216-829-11	s	METAL, CHIP 4.7K 5% 1/16W
R317	1-216-829-11	s	METAL, CHIP 4.7K 5% 1/16W
R318	1-216-829-11	s	METAL, CHIP 4.7K 5% 1/16W
R320	1-216-829-11	s	METAL, CHIP 4.7K 5% 1/16W
R321	1-216-829-11	s	METAL, CHIP 4.7K 5% 1/16W
R322	1-216-829-11	s	METAL, CHIP 4.7K 5% 1/16W
R323	1-216-864-11	s	METAL, CHIP 0 5% 1/16W
R324	1-216-864-11	s	METAL, CHIP 0 5% 1/16W
R325	1-216-864-11	s	METAL, CHIP 0 5% 1/16W
R326	1-218-692-11	s	CHIP, METAL 1K 0.50% 1/16W
R327	1-218-692-11	s	CHIP, METAL 1K 0.50% 1/16W
R328	1-218-708-11	s	METAL 4.7K 0.50% 1/16W
R330	1-216-864-11	s	METAL, CHIP 0 5% 1/16W
R331	1-218-724-11	s	CHIP, METAL 22K 5% 1/16W
R332	1-218-883-11	s	METAL 33K 0.50% 1/16W
R333	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R334	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R335	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R336	1-218-727-11	s	METAL 30K 0.50% 1/16W

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Ref. No. or Q'ty	Part No.	SP	Description
R337	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R357	1-218-680-11	s	METAL 330 0.50% 1/16W
R358	1-218-672-11	s	METAL 150 0.50% 1/16W
R361	1-218-856-11	s	CHIP, METAL 2.4K 0.50% 1/16W
R362	1-218-856-11	s	CHIP, METAL 2.4K 0.50% 1/16W
R363	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R364	1-216-849-11	s	METAL, CHIP 220K 5% 1/16W
R365	1-216-849-11	s	METAL, CHIP 220K 5% 1/16W
R366	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R367	1-218-700-11	s	METAL 2.2K 0.50% 1/16W
R368	1-218-692-11	s	CHIP, METAL 1K 0.50% 1/16W
R369	1-218-829-11	s	CHIP, METAL 180 0.50% 1/16W
R370	1-218-856-11	s	CHIP, METAL 2.4K 0.50% 1/16W
R371	1-216-797-11	s	METAL, CHIP 10 5% 1/16W
R372	1-218-856-11	s	CHIP, METAL 2.4K 0.50% 1/16W
R373	1-218-856-11	s	CHIP, METAL 2.4K 0.50% 1/16W
R374	1-216-797-11	s	METAL, CHIP 10 5% 1/16W
R375	1-218-856-11	s	CHIP, METAL 2.4K 0.50% 1/16W
R376	1-218-727-11	s	METAL 30K 0.50% 1/16W
R378	1-218-664-11	s	CHIP, METAL 68 0.50% 1/16W
R379	1-218-727-11	s	METAL 30K 0.50% 1/16W
R380	1-218-655-91	s	CHIP, METAL 30 0.50% 1/16W
RB1	1-239-309-11	s	RESISTOR BLOCK, CHIP 100KX8
RB2	1-239-309-11	s	RESISTOR BLOCK, CHIP 100KX8
RB3	1-239-309-11	s	RESISTOR BLOCK, CHIP 100KX8
RB4	1-236-908-11	s	RESISTOR, NETWORK, CHIP 10k
RB5	1-236-908-11	s	RESISTOR, NETWORK, CHIP 10k
RB6	1-236-906-11	s	NETWORK RESISTOR (CHIP) 15K
RB7	1-236-906-11	s	NETWORK RESISTOR (CHIP) 15K

IF-510 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-8272-568-A	o	MOUNTED CIRCUIT BOARD, IF-510
1pc	3-692-129-02	o	PANEL,IF-510 PC BOARD
1pc	3-724-753-01	o	RING
6pcs	3-729-061-01	s	SCREW (M2X4.5) (TYPE 1)
C10	1-104-913-11	s	TANTALUM, CHIP 10uF 20% 16V
C11	1-135-160-21	s	CHIP, TANTALUM 15uF 10% 16V
C12	1-164-156-11	s	CERAMIC 0.1uF 25V
C13	1-135-208-11	s	TANTAL 1uF 20% 10V
C14	1-135-165-11	s	TANTALUM, CHIP 33uF 10% 16V
C15	1-164-156-11	s	CERAMIC 0.1uF 25V
C16	1-164-156-11	s	CERAMIC 0.1uF 25V
C17	1-164-156-11	s	CERAMIC 0.1uF 25V
C20	1-135-160-21	s	CHIP, TANTALUM 15uF 10% 16V
C21	1-135-160-21	s	CHIP, TANTALUM 15uF 10% 16V
C22	1-164-156-11	s	CERAMIC 0.1uF 25V
C23	1-135-208-11	s	TANTAL 1uF 20% 10V
C24	1-135-165-11	s	TANTALUM, CHIP 33uF 10% 16V
C25	1-164-156-11	s	CERAMIC 0.1uF 25V
C26	1-164-156-11	s	CERAMIC 0.1uF 25V
C30	1-104-851-11	s	TANTALUM, CHIP 10uF 20% 10V
C31	1-104-851-11	s	TANTALUM, CHIP 10uF 20% 10V
C32	1-164-156-11	s	CERAMIC 0.1uF 25V
C33	1-135-208-11	s	TANTAL 1uF 20% 10V
C34	1-104-911-11	s	TANTALUM, CHIP 33uF 20% 10V
C35	1-164-156-11	s	CERAMIC 0.1uF 25V
C36	1-164-156-11	s	CERAMIC 0.1uF 25V
C101	1-164-156-11	s	CERAMIC 0.1uF 25V
C102	1-164-156-11	s	CERAMIC 0.1uF 25V
C103	1-162-907-11	s	CERAMIC, CHIP 2PF 50V
C104	1-104-914-11	s	TANTAL 22uF 20% 16V
C105	1-104-914-11	s	TANTAL 22uF 20% 16V
C150	1-164-156-11	s	CERAMIC 0.1uF 25V
C151	1-135-160-21	s	CHIP, TANTALUM 15uF 10% 16V
C152	1-164-156-11	s	CERAMIC 0.1uF 25V
C153	1-164-156-11	s	CERAMIC 0.1uF 25V
C154	1-164-156-11	s	CERAMIC 0.1uF 25V
C155	1-164-156-11	s	CERAMIC 0.1uF 25V
C201	1-164-156-11	s	CERAMIC 0.1uF 25V
C202	1-164-156-11	s	CERAMIC 0.1uF 25V
C203	1-164-156-11	s	CERAMIC 0.1uF 25V
C204	1-164-156-11	s	CERAMIC 0.1uF 25V
C205	1-164-156-11	s	CERAMIC 0.1uF 25V
C206	1-164-156-11	s	CERAMIC 0.1uF 25V
C221	1-104-914-11	s	TANTAL 22uF 20% 16V
C222	1-164-156-11	s	CERAMIC 0.1uF 25V
C223	1-162-927-11	s	CERAMIC, CHIP 100PF 5% 50V
C224	1-162-907-11	s	CERAMIC, CHIP 2PF 50V
C225	1-104-914-11	s	TANTAL 22uF 20% 16V
C226	1-164-156-11	s	CERAMIC 0.1uF 25V
C250	1-104-851-11	s	TANTALUM, CHIP 10uF 20% 10V
C252	1-162-917-11	s	CERAMIC 15PF 5% 50V
C253	1-162-919-11	s	CERAMIC 22PF 5% 50V
C254	1-162-922-11	s	CERAMIC 39PF 5% 50V
C255	1-104-851-11	s	TANTALUM, CHIP 10uF 20% 10V
C300	1-164-156-11	s	CERAMIC 0.1uF 25V
C301	1-164-156-11	s	CERAMIC 0.1uF 25V
C303	1-164-156-11	s	CERAMIC 0.1uF 25V
C307	1-164-156-11	s	CERAMIC 0.1uF 25V
C308	1-164-156-11	s	CERAMIC 0.1uF 25V

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Ref. No. or Q'ty	Part No.	SP	Description
C309	1-164-156-11	s	CERAMIC 0.1uF 25V
C311	1-164-156-11	s	CERAMIC 0.1uF 25V
C312	1-164-156-11	s	CERAMIC 0.1uF 25V
C313	1-104-914-11	s	TANTAL 22uF 20% 16V
C315	1-164-156-11	s	CERAMIC 0.1uF 25V
C320	1-164-156-11	s	CERAMIC 0.1uF 25V
C321	1-164-156-11	s	CERAMIC 0.1uF 25V
C322	1-164-156-11	s	CERAMIC 0.1uF 25V
C330	1-162-958-11	s	CERAMIC 270p 10% 50V
C350	1-104-913-11	s	TANTALUM, CHIP 10uF 20% 16V
C351	1-164-156-11	s	CERAMIC 0.1uF 25V
C352	1-164-156-11	s	CERAMIC 0.1uF 25V
C353	1-164-156-11	s	CERAMIC 0.1uF 25V
C400	1-162-905-11	s	CERAMIC 1PF 0.25PF 50V
C401	1-104-914-11	s	TANTAL 22uF 20% 16V
C402	1-104-914-11	s	TANTAL 22uF 20% 16V
C403	1-164-156-11	s	CERAMIC 0.1uF 25V
C404	1-164-156-11	s	CERAMIC 0.1uF 25V
C405	1-104-914-11	s	TANTAL 22uF 20% 16V
C406	1-104-910-11	s	CHIP,TANTALUM 15uF 10% 10V
C407	1-162-905-11	s	CERAMIC 1PF 0.25PF 50V
C408	1-104-914-11	s	TANTAL 22uF 20% 16V
C409	1-104-914-11	s	TANTAL 22uF 20% 16V
C410	1-164-156-11	s	CERAMIC 0.1uF 25V
C411	1-164-156-11	s	CERAMIC 0.1uF 25V
C412	1-104-914-11	s	TANTAL 22uF 20% 16V
C413	1-104-910-11	s	CHIP,TANTALUM 15uF 10% 10V
C414	1-162-905-11	s	CERAMIC 1PF 0.25PF 50V
C415	1-104-914-11	s	TANTAL 22uF 20% 16V
C416	1-104-914-11	s	TANTAL 22uF 20% 16V
C417	1-164-156-11	s	CERAMIC 0.1uF 25V
C418	1-164-156-11	s	CERAMIC 0.1uF 25V
C419	1-104-914-11	s	TANTAL 22uF 20% 16V
C420	1-104-910-11	s	CHIP,TANTALUM 15uF 10% 10V
C421	1-162-919-11	s	CERAMIC, CHIP 22PF 5% 50V
C422	1-164-156-11	s	CERAMIC 0.1uF 25V
C502	1-162-909-11	s	CERAMIC 4PF 0.25PF 50V
C503	1-162-909-11	s	CERAMIC 4PF 0.25PF 50V
C504	1-104-914-11	s	TANTAL 22uF 20% 16V
C505	1-104-910-11	s	CHIP,TANTALUM 15uF 10% 10V
C508	1-162-909-11	s	CERAMIC 4PF 0.25PF 50V
C509	1-162-909-11	s	CERAMIC 4PF 0.25PF 50V
C510	1-104-914-11	s	TANTAL 22uF 20% 16V
C511	1-104-910-11	s	CHIP,TANTALUM 15uF 10% 10V
C513	1-162-915-11	s	CERAMIC, CHIP 10PF 5PF 50V
C514	1-162-911-11	s	CERAMIC, CHIP 6PF 50V
C515	1-162-909-11	s	CERAMIC 4PF 0.25PF 50V
C516	1-104-914-11	s	TANTAL 22uF 20% 16V
C517	1-104-910-11	s	CHIP,TANTALUM 15uF 10% 10V
C518	1-162-915-11	s	CERAMIC, CHIP 10PF 5PF 50V
C519	1-135-070-00	s	TANTALUM, CHIP 0.1uF 10% 35V
C520	1-104-914-11	s	TANTAL 22uF 20% 16V
C521	1-104-914-11	s	TANTAL 22uF 20% 16V
C522	1-164-156-11	s	CERAMIC 0.1uF 25V
C524	1-164-156-11	s	CERAMIC 0.1uF 25V
C525	1-164-156-11	s	CERAMIC 0.1uF 25V
C601	1-164-156-11	s	CERAMIC 0.1uF 25V
C602	1-164-156-11	s	CERAMIC 0.1uF 25V
C603	1-162-907-11	s	CERAMIC, CHIP 2PF 50V
C604	1-162-927-11	s	CERAMIC, CHIP 100PF 5% 50V

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Ref. No. or Q'ty	Part No.	SP	Description
C605	1-104-914-11	s	TANTAL 22uF 20% 16V
C606	1-104-914-11	s	TANTAL 22uF 20% 16V
C621	1-164-156-11	s	CERAMIC 0.1uF 25V
C622	1-164-156-11	s	CERAMIC 0.1uF 25V
C623	1-162-907-11	s	CERAMIC, CHIP 2PF 50V
C624	1-162-927-11	s	CERAMIC, CHIP 100PF 5% 50V
C625	1-104-914-11	s	TANTAL 22uF 20% 16V
C626	1-104-914-11	s	TANTAL 22uF 20% 16V
C641	1-164-156-11	s	CERAMIC 0.1uF 25V
C642	1-164-156-11	s	CERAMIC 0.1uF 25V
C643	1-162-907-11	s	CERAMIC, CHIP 2PF 50V
C644	1-162-927-11	s	CERAMIC, CHIP 100PF 5% 50V
C645	1-104-914-11	s	TANTAL 22uF 20% 16V
C646	1-104-914-11	s	TANTAL 22uF 20% 16V
C701	1-164-156-11	s	CERAMIC 0.1uF 25V
C702	1-164-156-11	s	CERAMIC 0.1uF 25V
C703	1-164-156-11	s	CERAMIC 0.1uF 25V
C704	1-126-396-11	s	ELECT, CHIP 47uF 20% 16V
C705	1-126-396-11	s	ELECT, CHIP 47uF 20% 16V
C706	1-104-851-11	s	TANTALUM, CHIP 10uF 20% 10V
C707	1-162-915-11	s	CERAMIC, CHIP 10PF 5PF 50V
D11	8-719-029-63	s	DIODE RD4.3UH-T1
D21	8-719-029-63	s	DIODE RD4.3UH-T1
D31	8-719-029-57	s	DIODE RD2.4UH-T1
D101	8-719-820-41	s	DIODE 1SS302
D250	8-719-948-47	s	DIODE HSM88AS
D400	8-719-820-41	s	DIODE 1SS302
D401	8-719-820-41	s	DIODE 1SS302
D402	8-719-820-41	s	DIODE 1SS302
D500	8-719-820-41	s	DIODE 1SS302
IC12	8-759-076-06	s	IC TL064CPW
IC101	8-759-082-61	s	IC TC4W53FU
IC151	8-759-925-76	s	IC SN74HC08ANS
IC152	8-759-082-55	s	IC TC7W00FU
IC153	8-759-237-79	s	IC TC74HC595AF(EL)
IC154	8-759-082-58	s	IC TC7W08FU
IC155	8-759-086-42	s	IC X24C02S-3.0-C7000
IC200	8-759-082-61	s	IC TC4W53FU
IC201	8-759-089-61	s	IC TC74HC4052AFS(EL)
IC202	8-759-089-61	s	IC TC74HC4052AFS(EL)
IC206	8-759-054-61	s	IC CLC505AJE
IC301	8-759-254-49	s	IC EL4581CS-TE2
IC302	8-759-925-90	s	IC SN74HC74ANS
IC303	8-759-925-90	s	IC SN74HC74ANS
IC304	8-759-082-59	s	IC TC7W32FU
IC305	8-759-925-90	s	IC SN74HC74ANS
IC306	8-759-082-57	s	IC TC7W04FU
IC307	8-759-082-58	s	IC TC7W08FU
IC308	8-759-058-62	s	IC TC7S08FU(TE85R)
IC309	8-759-082-59	s	IC TC7W32FU
IC310	8-759-082-58	s	IC TC7W08FU
IC322	8-759-032-01	s	IC MC74HC00AF
IC351	8-759-925-90	s	IC SN74HC74ANS
IC352	8-759-058-58	s	IC TC7S04FU(TE85R)
IC400	8-759-082-61	s	IC TC4W53FU
IC404	8-759-209-57	s	IC TC4S69F
IC410	8-759-082-61	s	IC TC4W53FU
IC420	8-759-082-61	s	IC TC4W53FU

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Ref. No. or Q'ty	Part No.	SP	Description
IC500	8-759-066-59	s	IC TC74HC4053AFS
IC501	8-759-981-48	s	IC TL082M
IC502	8-759-082-58	s	IC TC7W08FU
IC601	8-759-054-61	s	IC CLC505AJE
IC621	8-759-054-61	s	IC CLC505AJE
IC641	8-759-054-61	s	IC CLC505AJE
IC701	8-759-988-13	s	IC LM393PS
IC702	8-759-195-81	s	IC TC7S86FU
L1	1-410-737-31	s	INDUCTOR CHIP 0.47uH
L2	1-410-737-31	s	INDUCTOR CHIP 0.47uH
L3	1-410-737-31	s	INDUCTOR CHIP 0.47uH
L150	1-410-369-11	s	INDUCTOR CHIP 1uH
L201	1-410-369-11	s	INDUCTOR CHIP 1uH
L202	1-410-369-11	s	INDUCTOR CHIP 1uH
L203	1-410-369-11	s	INDUCTOR CHIP 1uH
L301	1-410-369-11	s	INDUCTOR CHIP 1uH
L400	1-410-369-11	s	INDUCTOR CHIP 1uH
L401	1-410-369-11	s	INDUCTOR CHIP 1uH
L402	1-410-369-11	s	INDUCTOR CHIP 1uH
L500	1-410-369-11	s	INDUCTOR CHIP 1uH
L501	1-410-369-11	s	INDUCTOR CHIP 1uH
L502	1-410-369-11	s	INDUCTOR CHIP 1uH
L601	1-410-369-11	s	INDUCTOR CHIP 1uH
L602	1-410-369-11	s	INDUCTOR CHIP 1uH
L603	1-410-369-11	s	INDUCTOR CHIP 1uH
L700	1-410-369-11	s	INDUCTOR CHIP 1uH
Q1	8-729-117-16	s	TRANSISTOR 2SA1611-M6
Q2	8-729-117-32	s	TRANSISTOR 2SC4177
Q10	8-729-141-48	s	TRANSISTOR 2SB624-BV345
Q20	8-729-141-75	s	TRANSISTOR 2SD596DV345
Q30	8-729-141-75	s	TRANSISTOR 2SD596DV345
Q101	8-729-122-63	s	TRANSISTOR 2SA1226
Q102	8-729-122-63	s	TRANSISTOR 2SA1226
Q103	8-729-122-63	s	TRANSISTOR 2SA1226
Q109	8-729-117-16	s	TRANSISTOR 2SA1611-M6
Q110	8-729-117-32	s	TRANSISTOR 2SC4177
Q205	8-729-117-16	s	TRANSISTOR 2SA1611-M6
Q206	8-729-117-32	s	TRANSISTOR 2SC4177
Q207	8-729-117-16	s	TRANSISTOR 2SA1611-M6
Q208	8-729-117-32	s	TRANSISTOR 2SC4177
Q209	8-729-117-16	s	TRANSISTOR 2SA1611-M6
Q210	8-729-117-16	s	TRANSISTOR 2SA1611-M6
Q211	8-729-117-32	s	TRANSISTOR 2SC4177
Q250	8-729-117-32	s	TRANSISTOR 2SC4177
Q251	8-729-117-16	s	TRANSISTOR 2SA1611-M6
Q252	8-729-117-16	s	TRANSISTOR 2SA1611-M6
Q271	8-729-117-16	s	TRANSISTOR 2SA1611-M6
Q272	8-729-117-16	s	TRANSISTOR 2SA1611-M6
Q273	8-729-117-16	s	TRANSISTOR 2SA1611-M6
Q352	8-729-920-48	s	TRANSISTOR IMH2
Q353	8-729-920-48	s	TRANSISTOR IMH2
Q354	8-729-028-91	s	TRANSISTOR DTA144EUA-T106
Q401	8-729-117-16	s	TRANSISTOR 2SA1611-M6
Q402	8-729-117-32	s	TRANSISTOR 2SC4177
Q403	8-729-026-32	s	TRANSISTOR XP6534
Q404	8-729-117-73	s	TRANSISTOR 2SC4178-F14
Q405	8-729-117-16	s	TRANSISTOR 2SA1611-M6
Q406	8-729-117-32	s	TRANSISTOR 2SC4177
Q410	8-729-026-32	s	TRANSISTOR XP6534

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Ref. No. or Q'ty	Part No.	SP	Description
Q411	8-729-117-73	s	TRANSISTOR 2SC4178-F14
Q412	8-729-117-16	s	TRANSISTOR 2SA1611-M6
Q413	8-729-117-16	s	TRANSISTOR 2SA1611-M6
Q414	8-729-117-32	s	TRANSISTOR 2SC4177
Q420	8-729-026-32	s	TRANSISTOR XP6534
Q421	8-729-117-73	s	TRANSISTOR 2SC4178-F14
Q422	8-729-117-16	s	TRANSISTOR 2SA1611-M6
Q423	8-729-117-16	s	TRANSISTOR 2SA1611-M6
Q424	8-729-117-32	s	TRANSISTOR 2SC4177
Q430	8-729-117-16	s	TRANSISTOR 2SA1611-M6
Q431	8-729-117-32	s	TRANSISTOR 2SC4177
Q500	8-729-026-32	s	TRANSISTOR XP6534
Q501	8-729-122-63	s	TRANSISTOR 2SA1226
Q502	8-729-102-08	s	TRANSISTOR 2SC2223-F14
Q503	8-729-026-32	s	TRANSISTOR XP6534
Q504	8-729-122-63	s	TRANSISTOR 2SA1226
Q505	8-729-102-08	s	TRANSISTOR 2SC2223-F14
Q506	8-729-026-32	s	TRANSISTOR XP6534
Q507	8-729-122-63	s	TRANSISTOR 2SA1226
Q508	8-729-102-08	s	TRANSISTOR 2SC2223-F14
Q509	8-729-117-16	s	TRANSISTOR 2SA1611-M6
Q510	8-729-117-32	s	TRANSISTOR 2SC4177
Q701	8-729-230-49	s	TRANSISTOR 2SC2712-YG
Q702	8-729-800-37	s	TRANSISTOR 2SD1048-X7
Q703	8-729-141-48	s	TRANSISTOR 2SB624-BV345
R1	1-218-867-11	s	CHIP, METAL 6.8K 0.50% 1/16W
R2	1-218-704-11	s	METAL 3.3K 0.50% 1/16W
R8	1-218-748-11	s	CHIP, METAL 220K 0.50% 1/16W
R9	1-218-748-11	s	CHIP, METAL 220K 0.50% 1/16W
R10	1-218-716-11	s	METAL 10K 0.50% 1/16W
R13	1-218-677-11	s	CHIP, METAL 240 0.50% 1/16W
R14	1-218-723-11	s	METAL 20K 0.50% 1/16W
R15	1-218-724-11	s	CHIP, METAL 22K 5% 1/16W
R23	1-216-864-11	s	METAL, CHIP 0 5% 1/16W
R24	1-218-723-11	s	METAL 20K 0.50% 1/16W
R25	1-218-723-11	s	METAL 20K 0.50% 1/16W
R33	1-218-856-11	s	CHIP, METAL 2.4K 0.50% 1/16W
R34	1-218-729-11	s	CHIP, METAL 36K 0.50% 1/16W
R35	1-218-723-11	s	METAL 20K 0.50% 1/16W
R100	1-218-856-11	s	CHIP, METAL 2.4K 0.50% 1/16W
R101	1-218-708-11	s	METAL 4.7K 0.50% 1/16W
R102	1-218-710-11	s	CHIP, METAL 5.6K 0.50% 1/16W
R103	1-218-840-11	s	CHIP, METAL 510 0.50% 1/16W
R104	1-218-858-11	s	CHIP, METAL 3K 0.50% 1/16W
R105	1-218-840-11	s	CHIP, METAL 510 0.50% 1/16W
R106	1-211-990-11	s	CHIP, METAL 75 0.50% 1/10W
R107	1-218-705-11	s	CHIP, METAL 3.6K 0.50% 1/10W
R110	1-218-867-11	s	CHIP, METAL 6.8K 0.50% 1/16W
R111	1-218-704-11	s	METAL 3.3K 0.50% 1/16W
R151	1-216-857-11	s	METAL, CHIP 1M 5% 1/16W
R152	1-218-748-11	s	CHIP, METAL 220K 0.50% 1/16W
R153	1-218-740-11	s	METAL 100K 0.50% 1/16W
R154	1-218-668-11	s	CHIP, METAL 100 0.50% 1/16W
R155	1-218-668-11	s	CHIP, METAL 100 0.50% 1/16W
R156	1-218-668-11	s	CHIP, METAL 100 0.50% 1/16W
R198	1-216-857-11	s	METAL, CHIP 1M 5% 1/16W
R199	1-216-857-11	s	METAL, CHIP 1M 5% 1/16W
R200	1-218-668-11	s	CHIP, METAL 100 0.50% 1/16W
R201	1-218-668-11	s	CHIP, METAL 100 0.50% 1/16W
R202	1-218-668-11	s	CHIP, METAL 100 0.50% 1/16W
R203	1-218-867-11	s	CHIP, METAL 6.8K 0.50% 1/16W

(IF-510 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R204	1-218-704-11	s	METAL 3.3K 0.50% 1/16W
R205	1-218-668-11	s	CHIP, METAL 100 0.50% 1/16W
R206	1-218-867-11	s	CHIP, METAL 6.8K 0.50% 1/16W
R207	1-218-668-11	s	CHIP, METAL 100 0.50% 1/16W
R208	1-218-704-11	s	METAL 3.3K 0.50% 1/16W
R209	1-218-668-11	s	CHIP, METAL 100 0.50% 1/16W
R210	1-218-867-11	s	CHIP, METAL 6.8K 0.50% 1/16W
R211	1-218-668-11	s	CHIP, METAL 100 0.50% 1/16W
R212	1-218-867-11	s	CHIP, METAL 6.8K 0.50% 1/16W
R213	1-218-704-11	s	METAL 3.3K 0.50% 1/16W
R214	1-218-668-11	s	CHIP, METAL 100 0.50% 1/16W
R221	1-218-692-11	s	CHIP, METAL 1K 0.50% 1/16W
R222	1-218-724-11	s	CHIP, METAL 22K 5% 1/16W
R224	1-211-981-11	s	CHIP, METAL 33 0.50% 1/16W
R225	1-218-845-11	s	CHIP, METAL 820 0.50% 1/16W
R226	1-218-688-11	s	METAL 680 0.50% 1/16W
R227	1-218-883-11	s	METAL 33K 0.50% 1/16W
R228	1-218-692-11	s	CHIP, METAL 1K 0.50% 1/16W
R229	1-211-990-11	s	CHIP, METAL 75 0.50% 1/16W
R230	1-211-990-11	s	CHIP, METAL 75 0.50% 1/16W
R250	1-218-668-11	s	CHIP, METAL 100 0.50% 1/16W
R251	1-218-740-11	s	METAL 100K 0.50% 1/16W
R252	1-218-700-11	s	METAL 2.2K 0.50% 1/16W
R253	1-218-883-11	s	METAL 33K 0.50% 1/16W
R254	1-218-692-11	s	CHIP, METAL 1K 0.50% 1/16W
R256	1-218-840-11	s	CHIP, METAL 510 0.50% 1/16W
R257	1-218-706-11	s	METAL 3.9K 0.50% 1/16W
R258	1-218-722-11	s	CHIP, METAL 18K 0.50% 1/16W
R259	1-218-840-11	s	CHIP, METAL 510 0.50% 1/16W
R261	1-218-716-11	s	CHIP, METAL 10K 0.5% 1/16W
R263	1-216-857-11	s	METAL, CHIP 1M 5% 1/16W
R264	1-218-668-11	s	CHIP, METAL 100 0.50% 1/16W
R271	1-218-710-11	s	CHIP, METAL 5.6K 0.50% 1/16W
R272	1-218-692-11	s	CHIP, METAL 1K 0.50% 1/16W
R273	1-218-704-11	s	METAL 3.3K 0.50% 1/16W
R274	1-218-710-11	s	CHIP, METAL 5.6K 0.50% 1/16W
R275	1-218-692-11	s	CHIP, METAL 1K 0.50% 1/16W
R276	1-218-867-11	s	CHIP, METAL 6.8K 0.50% 1/16W
R277	1-218-710-11	s	CHIP, METAL 5.6K 0.50% 1/16W
R278	1-218-692-11	s	CHIP, METAL 1K 0.50% 1/16W
R279	1-218-867-11	s	CHIP, METAL 6.8K 0.50% 1/16W
R310	1-218-668-11	s	CHIP, METAL 100 0.50% 1/16W
R311	1-218-708-11	s	METAL 4.7K 0.50% 1/16W
R315	1-216-855-11	s	METAL, CHIP 680K 5% 1/16W
R320	1-218-668-11	s	CHIP, METAL 100 0.50% 1/16W
R321	1-218-668-11	s	CHIP, METAL 100 0.50% 1/16W
R322	1-216-857-11	s	METAL, CHIP 1M 5% 1/16W
R323	1-216-857-11	s	METAL, CHIP 1M 5% 1/16W
R324	1-218-668-11	s	CHIP, METAL 100 0.50% 1/16W
R325	1-218-668-11	s	CHIP, METAL 100 0.50% 1/16W
R326	1-218-668-11	s	CHIP, METAL 100 0.50% 1/16W
R327	1-218-668-11	s	CHIP, METAL 100 0.50% 1/16W
R328	1-216-857-11	s	METAL, CHIP 1M 5% 1/16W
R329	1-216-857-11	s	METAL, CHIP 1M 5% 1/16W
R351	1-218-716-11	s	METAL 10K 0.50% 1/16W
R352	1-218-724-11	s	CHIP, METAL 22K 5% 1/16W
R353	1-218-692-11	s	CHIP, METAL 1K 0.50% 1/16W
R354	1-216-857-11	s	METAL, CHIP 1M 5% 1/16W
R361	1-216-864-11	s	METAL, CHIP 0 5% 1/16W

(IF-510 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R400	1-218-668-11	s	CHIP, METAL 100 0.50% 1/16W
R401	1-218-867-11	s	CHIP, METAL 6.8K 0.50% 1/16W
R402	1-218-704-11	s	METAL 3.3K 0.50% 1/16W
R403	1-218-836-11	s	CHIP, METAL 360 0.50% 1/16W
R404	1-218-858-11	s	CHIP, METAL 3K 0.50% 1/16W
R405	1-218-729-11	s	CHIP, METAL 36K 0.50% 1/16W
R406	1-218-710-11	s	CHIP, METAL 5.6K 0.50% 1/16W
R407	1-218-706-11	s	METAL 3.9K 0.50% 1/16W
R408	1-218-700-11	s	METAL 2.2K 0.50% 1/16W
R409	1-218-702-11	s	CHIP, METAL 2.7K 0.50% 1/16W
R410	1-218-706-11	s	METAL 3.9K 0.50% 1/16W
R411	1-218-692-11	s	CHIP, METAL 1K 0.50% 1/16W
R412	1-218-724-11	s	CHIP, METAL 22K 5% 1/16W
R413	1-218-867-11	s	CHIP, METAL 6.8K 0.50% 1/16W
R414	1-218-851-11	s	CHIP, METAL 1.5K 0.50% 1/16W
R415	1-218-664-11	s	CHIP, METAL 68 0.50% 1/16W
R416	1-218-672-11	s	METAL 150 0.50% 1/16W
R417	1-218-856-11	s	CHIP, METAL 2.4K 0.50% 1/16W
R418	1-218-710-11	s	CHIP, METAL 5.6K 0.50% 1/16W
R419	1-218-706-11	s	METAL 3.9K 0.50% 1/16W
R420	1-218-700-11	s	METAL 2.2K 0.50% 1/16W
R421	1-218-702-11	s	CHIP, METAL 2.7K 0.50% 1/16W
R422	1-218-706-11	s	METAL 3.9K 0.50% 1/16W
R423	1-218-867-11	s	CHIP, METAL 6.8K 0.50% 1/16W
R424	1-218-692-11	s	CHIP, METAL 1K 0.50% 1/16W
R425	1-218-867-11	s	CHIP, METAL 6.8K 0.50% 1/16W
R426	1-218-851-11	s	CHIP, METAL 1.5K 0.50% 1/16W
R427	1-218-664-11	s	CHIP, METAL 68 0.50% 1/16W
R428	1-218-672-11	s	METAL 150 0.50% 1/16W
R429	1-218-856-11	s	CHIP, METAL 2.4K 0.50% 1/16W
R430	1-218-710-11	s	CHIP, METAL 5.6K 0.50% 1/16W
R431	1-218-706-11	s	METAL 3.9K 0.50% 1/16W
R432	1-218-700-11	s	METAL 2.2K 0.50% 1/16W
R433	1-218-702-11	s	CHIP, METAL 2.7K 0.50% 1/16W
R434	1-218-706-11	s	METAL 3.9K 0.50% 1/16W
R435	1-218-867-11	s	CHIP, METAL 6.8K 0.50% 1/16W
R436	1-218-692-11	s	CHIP, METAL 1K 0.50% 1/16W
R437	1-218-867-11	s	CHIP, METAL 6.8K 0.50% 1/16W
R438	1-218-851-11	s	CHIP, METAL 1.5K 0.50% 1/16W
R439	1-218-664-11	s	CHIP, METAL 68 0.50% 1/16W
R440	1-218-668-11	s	CHIP, METAL 100 0.50% 1/16W
R441	1-218-714-11	s	METAL 8.2K 0.50% 1/16W
R442	1-218-668-11	s	CHIP, METAL 100 0.50% 1/16W
R443	1-218-692-11	s	CHIP, METAL 1K 0.50% 1/16W
R444	1-218-867-11	s	CHIP, METAL 6.8K 0.50% 1/16W
R445	1-218-700-11	s	METAL 2.2K 0.50% 1/16W
R446	1-218-700-11	s	METAL 2.2K 0.50% 1/16W
R447	1-218-700-11	s	METAL 2.2K 0.50% 1/16W
R448	1-211-969-11	s	CHIP, METAL 10 0.50% 1/16W
R500	1-216-864-11	s	METAL, CHIP 0 5% 1/16W
R501	1-216-864-11	s	METAL, CHIP 0 5% 1/16W
R502	1-216-864-11	s	METAL, CHIP 0 5% 1/16W
R503	1-218-858-11	s	CHIP, METAL 3K 0.50% 1/16W
R504	1-216-864-11	s	METAL, CHIP 0 5% 1/16W
R505	1-218-698-11	s	METAL 1.8K 0.50% 1/16W
R506	1-218-671-11	s	CHIP, METAL 130 0.50% 1/16W
R507	1-218-851-11	s	CHIP, METAL 1.5K 0.50% 1/16W
R508	1-218-698-11	s	METAL 1.8K 0.50% 1/16W
R509	1-218-694-11	s	CHIP, METAL 1.2K 0.50% 1/16W

(IF-510 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R510	1-218-698-11	s	METAL 1.8K 0.50% 1/16W
R511	1-218-710-11	s	CHIP, METAL 5.6K 0.50% 1/16W
R512	1-218-660-91	s	CHIP, METAL 47 0.50% 1/16W
R513	1-216-864-11	s	METAL, CHIP 0 5% 1/16W
R514	1-218-851-11	s	CHIP, METAL 1.5K 0.50% 1/16W
R515	1-211-969-11	s	CHIP, METAL 10 0.50% 1/16W
R516	1-218-858-11	s	CHIP, METAL 3K 0.50% 1/16W
R517	1-216-864-11	s	METAL, CHIP 0 5% 1/16W
R518	1-218-851-11	s	CHIP, METAL 1.5K 0.50% 1/16W
R519	1-218-650-11	s	METAL, CHIP 18 0.50% 1/16
R520	1-218-698-11	s	METAL 1.8K 0.50% 1/16W
R521	1-218-851-11	s	CHIP, METAL 1.5K 0.50% 1/16W
R522	1-218-694-11	s	CHIP, METAL 1.2K 0.50% 1/16W
R523	1-218-698-11	s	METAL 1.8K 0.50% 1/16W
R524	1-218-710-11	s	CHIP, METAL 5.6K 0.50% 1/16W
R525	1-218-660-91	s	CHIP, METAL 47 0.50% 1/16W
R526	1-216-864-11	s	METAL, CHIP 0 5% 1/16W
R527	1-218-851-11	s	CHIP, METAL 1.5K 0.50% 1/16W
R528	1-211-969-11	s	CHIP, METAL 10 0.50% 1/16W
R529	1-216-864-11	s	METAL, CHIP 0 5% 1/16W
R530	1-218-858-11	s	CHIP, METAL 3K 0.50% 1/16W
R531	1-218-698-11	s	METAL 1.8K 0.50% 1/16W
R532	1-218-694-11	s	CHIP, METAL 1.2K 0.50% 1/16W
R533	1-218-846-11	s	CHIP, METAL 910 0.50% 1/16W
R534	1-211-992-11	s	CHIP,METAL 91 0.50% 1/16W
R535	1-218-840-11	s	CHIP, METAL 510 0.50% 1/16W
R536	1-218-699-11	s	CHIP, METAL 2K 0.50% 1/16W
R537	1-218-664-11	s	CHIP, METAL 68 0.50% 1/16W
R538	1-218-698-11	s	METAL 1.8K 0.50% 1/16W
R539	1-218-660-91	s	CHIP, METAL 47 0.50% 1/16W
R540	1-218-710-11	s	CHIP, METAL 5.6K 0.50% 1/16W
R541	1-218-851-11	s	CHIP, METAL 1.5K 0.50% 1/16W
R542	1-211-969-11	s	CHIP, METAL 10 0.50% 1/16W
R543	1-218-867-11	s	CHIP, METAL 6.8K 0.50% 1/16W
R544	1-218-692-11	s	CHIP, METAL 1K 0.50% 1/16W
R545	1-218-704-11	s	METAL 3.3K 0.50% 1/16W
R546	1-218-668-11	s	CHIP, METAL 100 0.50% 1/16W
R547	1-218-668-11	s	CHIP, METAL 100 0.50% 1/16W
R548	1-218-716-11	s	METAL 10K 0.50% 1/16W
R549	1-218-740-11	s	METAL 100K 0.50% 1/16W
R550	1-218-740-11	s	METAL 100K 0.50% 1/16W
R551	1-218-668-11	s	CHIP, METAL 100 0.50% 1/16W
R552	1-218-668-11	s	CHIP, METAL 100 0.50% 1/16W
R553	1-218-704-11	s	METAL 3.3K 0.50% 1/16W
R554	1-218-704-11	s	METAL 3.3K 0.50% 1/16W
R555	1-218-716-11	s	METAL 10K 0.50% 1/16W
R601	1-218-699-11	s	CHIP, METAL 2K 0.50% 1/16W
R602	1-218-698-11	s	METAL 1.8K 0.50% 1/16W
R603	1-218-670-11	s	METAL 120 0.50% 1/16W
R604	1-218-680-11	s	METAL 330 0.50% 1/16W
R605	1-218-692-11	s	CHIP, METAL 1K 0.50% 1/16W
R606	1-218-883-11	s	METAL 33K 0.50% 1/16W
R607	1-211-990-11	s	CHIP, METAL 75 0.50% 1/16W
R621	1-218-699-11	s	CHIP, METAL 2K 0.50% 1/16W
R622	1-218-698-11	s	CHIP, METAL 1.8K 0.50% 1/16W
R623	1-218-671-11	s	METAL 130 0.50% 1/16W
R624	1-218-680-11	s	METAL 330 0.50% 1/16W
R625	1-218-692-11	s	CHIP, METAL 1K 0.50% 1/16W
R626	1-218-883-11	s	METAL 33K 0.50% 1/16W
R627	1-211-990-11	s	CHIP, METAL 75 0.50% 1/16W
R641	1-218-699-11	s	CHIP, METAL 2K 0.50% 1/16W
R642	1-218-699-11	s	CHIP, METAL 2K 0.50% 1/16W
R643	1-216-864-11	s	METAL, CHIP 0 5% 1/16W
R644	1-218-680-11	s	METAL 330 0.50% 1/16W
R645	1-218-692-11	s	CHIP, METAL 1K 0.50% 1/16W
R646	1-218-883-11	s	METAL 33K 0.50% 1/16W
R647	1-211-990-11	s	CHIP, METAL 75 0.50% 1/16W
R701	1-218-732-11	s	METAL 47K 0.50% 1/16W
R702	1-218-716-11	s	METAL 10K 0.50% 1/16W
R703	1-218-723-11	s	METAL 20K 0.50% 1/16W
R704	1-218-725-11	s	METAL 24K 0.50% 1/16W
R705	1-218-732-11	s	METAL 47K 0.50% 1/16W
R706	1-218-732-11	s	METAL 47K 0.50% 1/16W
R707	1-218-883-11	s	METAL 33K 0.50% 1/16W
R708	1-218-881-11	s	CHIP, METAL 27K 0.50% 1/16W
R709	1-216-631-11	s	METAL 150 0.50% 1/10W
R710	1-216-631-11	s	METAL 150 0.50% 1/10W
R711	1-216-631-11	s	METAL 150 0.50% 1/10W
R712	1-216-631-11	s	METAL 150 0.50% 1/10W
R713	1-216-631-11	s	METAL 150 0.50% 1/10W
R714	1-216-631-11	s	METAL 150 0.50% 1/10W
R715	1-218-727-11	s	METAL 30K 0.50% 1/16W
R716	1-218-716-11	s	METAL 10K 0.50% 1/16W
R717	1-218-668-11	s	CHIP, METAL 100 0.50% 1/16W
R718	1-216-857-11	s	METAL, CHIP 1M 5% 1/16W
R719	1-218-716-11	s	METAL 10K 0.50% 1/16W
R721	1-218-699-11	s	CHIP, METAL 2K 0.50% 1/16W
R722	1-218-692-11	s	CHIP, METAL 1K 0.50% 1/16W
RV101	1-241-260-11	s	METAL, ADJ 500
S1	1-572-272-11	s	SWITCH, SLIDE

MB-602 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-8272-547-A	o	MOUNTED CIRCUIT BOARD, MB-602
15pcs	3-729-061-01	s	SCREW (M2X4.5) (TYPE 1)
C1	1-164-156-11	s	CERAMIC 0.1uF 25V
C2	1-164-156-11	s	CERAMIC 0.1uF 25V
C3	1-164-156-11	s	CERAMIC 0.1uF 25V
C4	1-164-156-11	s	CERAMIC 0.1uF 25V
C5	1-164-156-11	s	CERAMIC 0.1uF 25V
C6	1-164-156-11	s	CERAMIC 0.1uF 25V
C7	1-164-156-11	s	CERAMIC 0.1uF 25V
C8	1-164-156-11	s	CERAMIC 0.1uF 25V
C9	1-164-156-11	s	CERAMIC 0.1uF 25V
C10	1-164-156-11	s	CERAMIC 0.1uF 25V
C11	1-164-156-11	s	CERAMIC 0.1uF 25V
C12	1-164-156-11	s	CERAMIC 0.1uF 25V
C13	1-164-156-11	s	CERAMIC 0.1uF 25V
C14	1-164-156-11	s	CERAMIC 0.1uF 25V
C15	1-164-156-11	s	CERAMIC 0.1uF 25V
C16	1-164-156-11	s	CERAMIC 0.1uF 25V
C17	1-164-156-11	s	CERAMIC 0.1uF 25V
C18	1-164-156-11	s	CERAMIC 0.1uF 25V
C19	1-164-156-11	s	CERAMIC 0.1uF 25V
C20	1-164-156-11	s	CERAMIC 0.1uF 25V
C21	1-164-156-11	s	CERAMIC 0.1uF 25V
C22	1-164-156-11	s	CERAMIC 0.1uF 25V
C23	1-164-156-11	s	CERAMIC 0.1uF 25V
C24	1-164-156-11	s	CERAMIC 0.1uF 25V
C25	1-164-156-11	s	CERAMIC 0.1uF 25V
C26	1-164-156-11	s	CERAMIC 0.1uF 25V
C27	1-164-156-11	s	CERAMIC 0.1uF 25V
C28	1-164-156-11	s	CERAMIC 0.1uF 25V
C29	1-164-156-11	s	CERAMIC 0.1uF 25V
C30	1-164-156-11	s	CERAMIC 0.1uF 25V
C31	1-164-156-11	s	CERAMIC 0.1uF 25V
CN7	1-569-629-11	s	HOUSING, 24P
CN11	1-569-532-11	s	HOUSING, 30P
CN12	1-569-532-11	s	HOUSING, 30P
CN13	1-569-532-11	s	HOUSING, 30P
CN14	1-569-531-11	s	HOUSING, 20P
CN15	1-764-088-11	o	PIN, CONNECTOR (PC BOARD) 3P
CN21	1-764-093-21	o	PIN, CONNECTOR (PC BOARD) 8P
CN22	1-774-260-11	o	CONNECTOR, FFC (ZIF) 20P
CN23	1-774-261-21	o	CONNECTOR, FFC (ZIF) 24P
CN31	1-750-934-21	o	PIN, CONNECTOR 20P
CN32	1-764-097-11	o	PIN, CONNECTOR (PC BOARD) 12P
CN41	1-569-629-11	s	HOUSING, 24P
CN42	1-750-635-21	o	PIN, CONNECTOR (PC BOARD) 5P
CN51	1-770-580-11	o	SOCKET, CONNECTOR(PCB-PCB) 26P
D1	8-719-042-14	s	DIODE DE5LC20U-TA2
IC1	8-759-080-02	s	IC TC74VHC541FS(EL)
IC2	8-759-080-02	s	IC TC74VHC541FS(EL)
IC3	8-759-080-02	s	IC TC74VHC541FS(EL)
IC4	8-759-080-02	s	IC TC74VHC541FS(EL)
IC5	8-759-086-42	s	IC X24C02S-3.0-C7000
Q1	8-729-119-61	s	TRANSISTOR 2SA811A-C15
Q2	8-729-271-32	s	TRANSISTOR 2SC2713-L
R1	1-216-864-11	s	METAL, CHIP 0 5% 1/16W

(MB-602 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R2	1-216-864-11	s	METAL, CHIP 0 5% 1/16W
R3	1-216-864-11	s	METAL, CHIP 0 5% 1/16W
R4	1-216-864-11	s	METAL, CHIP 0 5% 1/16W
R6	1-216-864-11	s	METAL, CHIP 0 5% 1/16W
R7	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R8	1-216-842-11	s	METAL, CHIP 56K 5% 1/16W
R9	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R10	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R11	1-216-829-11	s	METAL, CHIP 4.7K 5% 1/16W
R12	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
RB1	1-239-409-11	s	NETWORK, RESISTOR (CHIP TYPE)
RB2	1-239-409-11	s	NETWORK, RESISTOR (CHIP TYPE)
RB3	1-239-409-11	s	NETWORK, RESISTOR (CHIP TYPE)
RB4	1-239-409-11	s	NETWORK, RESISTOR (CHIP TYPE)
RB5	1-239-409-11	s	NETWORK, RESISTOR (CHIP TYPE)
RB6	1-239-409-11	s	NETWORK, RESISTOR (CHIP TYPE)
RB7	1-239-409-11	s	NETWORK, RESISTOR (CHIP TYPE)
RB8	1-239-409-11	s	NETWORK, RESISTOR (CHIP TYPE)
S1	1-572-272-11	s	SWITCH, SLIDE

PR-211 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-8272-557-A	o	MOUNTED CIRCUIT BOARD, PR-211

SG-234 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-8272-564-A	o	MOUNTED CIRCUIT BOARD, SG-234
1pc	3-692-127-02	o	PANEL,SG-234 PC BOARD
1pc	3-724-753-01	o	RING
6pcs	3-729-061-01	s	SCREW (M2X4.5) (TYPE 1)
C1	1-135-177-21	s	TANTALUM, CHIP 1uF 10% 25V
C2	1-135-159-21	s	TANTALUM, CHIP 10uF 10% 20V
C3	1-135-214-21	s	TANTAL 4.7uF 20% 20V
C4	1-164-156-11	s	CERAMIC 0.1uF 25V
C5	1-164-156-11	s	CERAMIC 0.1uF 25V
C6	1-135-164-21	s	TANTALUM, CHIP 22uF 20% 10V
C7	1-164-156-11	s	CERAMIC 0.1uF 25V
C8	1-135-177-21	s	TANTALUM, CHIP 1uF 10% 25V
C9	1-135-215-21	s	TANTALUM, CHIP 6.8uF 20% 16V
C10	1-135-215-21	s	TANTALUM, CHIP 6.8uF 20% 16V
C11	1-164-156-11	s	CERAMIC 0.1uF 25V
C12	1-164-156-11	s	CERAMIC 0.1uF 25V
C13	1-135-165-11	s	TANTALUM, CHIP 33uF 10% 16V
C14	1-164-156-11	s	CERAMIC 0.1uF 25V
C15	1-164-156-11	s	CERAMIC 0.1uF 25V
C23	1-164-156-11	s	CERAMIC 0.1uF 25V
C24	1-135-215-21	s	TANTALUM, CHIP 6.8uF 20% 16V
C25	1-135-215-21	s	TANTALUM, CHIP 6.8uF 20% 16V
C26	1-164-156-11	s	CERAMIC 0.1uF 25V
C27	1-135-177-21	s	TANTALUM, CHIP 1uF 10% 25V
C28	1-135-215-21	s	TANTALUM, CHIP 6.8uF 20% 16V
C29	1-164-156-11	s	CERAMIC 0.1uF 25V
C30	1-135-210-11	s	TANTALUM 4.7uF 10% 10V
C31	1-164-156-11	s	CERAMIC 0.1uF 25V
C32	1-162-915-11	s	CERAMIC, CHIP 10PF 5PF 50V
C33	1-164-156-11	s	CERAMIC 0.1uF 25V
C34	1-162-966-11	s	CERAMIC, CHIP 0.0022uF 10% 50V
C35	1-135-216-11	s	TANTALUM, CHIP 10uF 20% 10V
C36	1-164-156-11	s	CERAMIC 0.1uF 25V
C37	1-164-156-11	s	CERAMIC 0.1uF 25V
C38	1-162-921-11	s	CERAMIC, CHIP 33PF 5% 50V
C39	1-164-156-11	s	CERAMIC 0.1uF 25V
C40	1-162-921-11	s	CERAMIC, CHIP 33PF 5% 50V
C41	1-162-923-11	s	CERAMIC, CHIP 47PF 5% 50V
C42	1-164-156-11	s	CERAMIC 0.1uF 25V
C43	1-162-925-11	s	CERAMIC, CHIP 68PF 5% 50V
C45	1-135-211-11	s	TANTALUM, CHIP 6.8uF 20% 6.3V
C46	1-164-346-11	s	CERAMIC 1uF 16V
C47	1-164-156-11	s	CERAMIC 0.1uF 25V
C48	1-135-215-21	s	TANTALUM, CHIP 6.8uF 20% 16V
C49	1-164-156-11	s	CERAMIC 0.1uF 25V
C50	1-135-210-11	s	TANTALUM 4.7uF 10% 10V
C51	1-135-161-21	s	TANTALUM, CHIP 22uF 10% 10V
C52	1-135-216-11	s	TANTALUM, CHIP 10uF 20% 10V
C53	1-164-156-11	s	CERAMIC 0.1uF 25V
C54	1-164-156-11	s	CERAMIC 0.1uF 25V
C56	1-165-128-11	s	CERAMIC 0.22uF 16V
C57	1-135-161-21	s	TANTALUM, CHIP 22uF 10% 10V
C58	1-164-156-11	s	CERAMIC 0.1uF 25V
C59	1-164-156-11	s	CERAMIC 0.1uF 25V
C60	1-164-156-11	s	CERAMIC 0.1uF 25V
C62	1-164-156-11	s	CERAMIC 0.1uF 25V
C63	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C64	1-135-165-11	s	TANTALUM, CHIP 33uF 10% 16V
C65	1-164-156-11	s	CERAMIC 0.1uF 25V

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Ref. No. or Q'ty	Part No.	SP	Description
C66	1-164-156-11	s	CERAMIC 0.1uF 25V
C67	1-164-156-11	s	CERAMIC 0.1uF 25V
C68	1-135-210-11	s	TANTALUM 4.7uF 10% 10V
C69	1-164-156-11	s	CERAMIC 0.1uF 25V
C70	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C71	1-135-076-21	s	TANTALUM, CHIP 1uF 10% 35V
C72	1-135-217-21	s	TANTAL 15uF 20% 6.3
C73	1-162-970-11	s	CERAMIC, CHIP 0.01uF 10% 25V
C74	1-164-156-11	s	CERAMIC 0.1uF 25V
C75	1-164-156-11	s	CERAMIC 0.1uF 25V
C76	1-135-216-11	s	TANTALUM, CHIP 10uF 20% 10V
C77	1-164-156-11	s	CERAMIC 0.1uF 25V
C78	1-164-156-11	s	CERAMIC 0.1uF 25V
C79	1-162-909-11	s	CERAMIC 4PF 0.25PF 50V
C80	1-164-315-11	s	CERAMIC 470PF 5% 50V
C81	1-128-391-11	s	ELECT 330uF 20% 6.3V
C82	1-164-156-11	s	CERAMIC 0.1uF 25V
C83	1-164-156-11	s	CERAMIC 0.1uF 25V
C85	1-164-156-11	s	CERAMIC 0.1uF 25V
C87	1-162-919-11	s	CERAMIC, CHIP 22PF 5% 50V
C88	1-162-927-11	s	CERAMIC, CHIP 100PF 5% 50V
C89	1-162-923-11	s	CERAMIC, CHIP 47PF 5% 50V
C90	1-164-156-11	s	CERAMIC 0.1uF 25V
C92	1-164-156-11	s	CERAMIC 0.1uF 25V
C93	1-164-156-11	s	CERAMIC 0.1uF 25V
C94	1-164-156-11	s	CERAMIC 0.1uF 25V
C95	1-135-178-11	s	TANTALUM CHIP 1.5uF 20% 20V
C96	1-164-156-11	s	CERAMIC 0.1uF 25V
C97	1-135-179-21	s	TANTAL 2.2uF 10% 16V
C98	1-164-156-11	s	CERAMIC 0.1uF 25V
C99	1-164-156-11	s	CERAMIC 0.1uF 25V
C100	1-164-156-11	s	CERAMIC 0.1uF 25V
C200	1-164-156-11	s	CERAMIC 0.1uF 25V
C201	1-164-156-11	s	CERAMIC 0.1uF 25V
D1	8-719-029-63	s	DIODE RD4.3UH-T1
D2	8-719-029-63	s	DIODE RD4.3UH-T1
D3	8-719-948-47	s	DIODE HSM88AS
D4	8-719-029-63	s	DIODE RD4.3UH-T1
D5	8-719-820-41	s	DIODE 1SS302
D6	8-719-404-35	s	DIODE MA141WK
D7	8-719-404-35	s	DIODE MA141WK
D8	8-719-041-68	s	DIODE RD3.3UH-T1
D10	8-719-948-47	s	DIODE HSM88AS
D11	8-719-820-41	s	DIODE 1SS302
D12	8-719-948-47	s	DIODE HSM88AS
D13	8-719-948-47	s	DIODE HSM88AS
D14	8-719-800-76	s	DIODE 1SS126
D200	8-719-820-41	s	DIODE 1SS302
D201	8-719-948-47	s	DIODE HSM88AS
FL1	1-239-756-11	s	FILTER, LOW PASS
IC3	8-759-076-06	s	IC TL064CPW
IC5	8-759-254-49	s	IC EL4581CS-TE2
IC8	8-759-082-57	s	IC TC7W04FU
IC11	8-759-082-58	s	IC TC7W08FU
IC12	8-759-064-36	s	IC MB88346BPFV
IC13	8-759-066-59	s	IC TC74HC4053AFS
IC16	8-752-360-44	s	IC CXK1203AR
IC17	8-759-082-61	s	IC TC4W53FU

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Ref. No. or Q'ty	Part No.	SP	Description
IC18	8-759-632-39	s	IC M51958A-T1
IC20	8-759-058-62	s	IC TC7S08FU(TE85R)
IC21	8-759-086-42	s	IC X24C02S-3.0-C7000
IC22	8-759-271-86	s	IC TC7SH04FU
IC25	8-759-079-85	s	IC TC74VHC244FS(EL)
IC30	8-759-079-85	s	IC TC74VHC244FS(EL)
IC31	8-759-271-86	s	IC TC7SH04FU
IC32	8-759-076-06	s	IC TL064CPW
IC33	8-759-066-59	s	IC TC74HC4053AFS
IC34	8-759-184-64	s	IC TC4W66FU
IC35	8-759-049-86	s	IC SN74HCT244APW-E20
IC36	8-759-180-08	s	IC TC74HC4538AFS
IC37	8-759-082-58	s	IC TC7W08FU
IC38	8-759-083-94	s	IC TC7W74FU
IC39	8-759-195-81	s	IC TC7S86FU
IC40	8-759-082-60	s	IC TC7S66FU
IC41	8-759-082-61	s	IC TC4W53FU
IC42	8-759-049-86	s	IC SN74HCT244APW-E20
IC43	8-759-058-54	s	IC TC7S00FU(TE85R)
IC44	8-759-082-61	s	IC TC4W53FU
IC45	8-759-271-86	s	IC TC7SH04FU
IC46	8-759-082-61	s	IC TC4W53FU
IC47	8-759-082-61	s	IC TC4W53FU
IC48	8-759-173-16	s	IC TL062CPW
IC200	8-759-079-61	s	IC TC74VHC74FS(EL)
IC201	8-759-058-58	s	IC TC7S04FU(TE85R)
IC202	8-759-058-64	s	IC TC7S32FU(TE85R)
IC203	8-759-058-62	s	IC TC7S08FU(TE85R)
IC204	8-759-082-61	s	IC TC4W53FU
IC206	8-759-173-16	s	IC TL062CPW
IC207	8-759-058-55	s	IC TC7S02FU-TE85L
L1	1-410-737-31	s	INDUCTOR CHIP 0.47uH
L2	1-410-737-31	s	INDUCTOR CHIP 0.47uH
L4	1-410-737-31	s	INDUCTOR CHIP 0.47uH
L5	1-410-385-11	s	INDUCTOR, CHIP 22uH
L6	1-410-385-11	s	INDUCTOR, CHIP 22uH
L7	1-410-385-11	s	INDUCTOR, CHIP 22uH
L8	1-410-385-11	s	INDUCTOR, CHIP 22uH
L9	1-410-385-11	s	INDUCTOR, CHIP 22uH
Q1	8-729-141-48	s	TRANSISTOR 2SB624-BV345
Q2	8-729-141-48	s	TRANSISTOR 2SB624-BV345
Q4	8-729-141-75	s	TRANSISTOR 2SD596DV345
Q5	8-729-117-73	s	TRANSISTOR 2SC4178-F14
Q6	8-729-117-16	s	TRANSISTOR 2SA1611-M6
Q7	8-729-117-32	s	TRANSISTOR 2SC4177
Q8	8-729-117-73	s	TRANSISTOR 2SC4178-F14
Q9	8-729-117-32	s	TRANSISTOR 2SC4177
Q10	8-729-117-73	s	TRANSISTOR 2SC4178-F14
Q11	8-729-117-32	s	TRANSISTOR 2SC4177
Q12	8-729-403-29	s	TRANSISTOR XN6435
Q14	8-729-117-32	s	TRANSISTOR 2SC4177
Q15	8-729-117-73	s	TRANSISTOR 2SC4178-F14
Q16	8-729-118-56	s	TRANSISTOR 2SK852-X2
Q17	8-729-117-32	s	TRANSISTOR 2SC4177
Q18	8-729-920-48	s	TRANSISTOR IMH2
Q20	8-729-029-14	s	TRANSISTOR DTC144EUA-T106
Q21	8-729-118-56	s	TRANSISTOR 2SK852-X2
Q22	8-729-029-14	s	TRANSISTOR DTC144EUA-T106

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Ref. No. or Q'ty	Part No.	SP	Description
Q23	8-729-029-14	s	TRANSISTOR DTC144EUA-T106
Q24	8-729-029-14	s	TRANSISTOR DTC144EUA-T106
Q25	8-729-029-14	s	TRANSISTOR DTC144EUA-T106
Q26	8-729-029-14	s	TRANSISTOR DTC144EUA-T106
Q200	8-729-029-14	s	TRANSISTOR DTC144EUA-T106
Q201	8-729-029-14	s	TRANSISTOR DTC144EUA-T106
Q202	8-729-216-22	s	TRANSISTOR 2SA1162
Q203	8-729-029-14	s	TRANSISTOR DTC144EUA-T106
Q204	8-729-029-14	s	TRANSISTOR DTC144EUA-T106
Q205	8-729-117-32	s	TRANSISTOR 2SC4177
R1	1-218-716-11	s	METAL 10K 0.50% 1/16W
R2	1-216-864-11	s	METAL, CHIP 0 5% 1/16W
R3	1-216-864-11	s	METAL, CHIP 0 5% 1/16W
R5	1-216-864-11	s	METAL, CHIP 0 5% 1/16W
R6	1-218-677-11	s	CHIP, METAL 240 0.50% 1/16W
R7	1-218-723-11	s	METAL 20K 0.50% 1/16W
R8	1-218-724-11	s	CHIP, METAL 22K 5% 1/16W
R9	1-218-729-11	s	CHIP, METAL 36K 0.50% 1/16W
R10	1-218-723-11	s	METAL 20K 0.50% 1/16W
R11	1-216-864-11	s	METAL, CHIP 0 5% 1/16W
R15	1-216-864-11	s	METAL, CHIP 0 5% 1/16W
R16	1-218-724-11	s	CHIP, METAL 22K 5% 1/16W
R17	1-218-720-11	s	METAL 15K 0.50% 1/16W
R18	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R21	1-218-692-11	s	CHIP, METAL 1K 0.50% 1/16W
R22	1-218-692-11	s	CHIP, METAL 1K 0.50% 1/16W
R23	1-216-805-11	s	METAL, CHIP 47 5% 1/16W
R24	1-218-704-11	s	METAL 3.3K 0.50% 1/16W
R25	1-216-831-11	s	METAL, CHIP 6.8K 5% 1/16W
R26	1-218-700-11	s	METAL 2.2K 0.50% 1/16W
R27	1-218-700-11	s	METAL 2.2K 0.50% 1/16W
R28	1-218-706-11	s	METAL 3.9K 0.50% 1/16W
R29	1-218-873-11	s	CHIP, METAL 12K 0.50% 1/16W
R30	1-218-716-11	s	METAL 10K 0.50% 1/16W
R31	1-218-716-11	s	METAL 10K 0.50% 1/16W
R32	1-218-720-11	s	METAL 15K 0.50% 1/16W
R33	1-218-708-11	s	METAL 4.7K 0.50% 1/16W
R34	1-218-724-11	s	CHIP, METAL 22K 5% 1/16W
R35	1-218-732-11	s	METAL 47K 0.50% 1/16W
R36	1-218-704-11	s	METAL 3.3K 0.50% 1/16W
R37	1-218-706-11	s	METAL 3.9K 0.50% 1/16W
R38	1-218-716-11	s	METAL 10K 0.50% 1/16W
R39	1-218-736-11	s	METAL 68K 0.50% 1/16W
R40	1-218-889-11	s	CHIP, METAL 56K 0.50% 1/16W
R41	1-218-716-11	s	METAL 10K 0.50% 1/16W
R42	1-218-704-11	s	METAL 3.3K 0.50% 1/16W
R43	1-218-740-11	s	METAL 100K 0.50% 1/16W
R44	1-218-845-11	s	CHIP, METAL 820 0.50% 1/16W
R45	1-218-700-11	s	METAL 2.2K 0.50% 1/16W
R46	1-218-700-11	s	METAL 2.2K 0.50% 1/16W
R47	1-218-716-11	s	METAL 10K 0.50% 1/16W
R48	1-218-720-11	s	METAL 15K 0.50% 1/16W
R49	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R50	1-216-817-11	s	METAL, CHIP 470 5% 1/16W
R51	1-218-692-11	s	CHIP, METAL 1K 0.50% 1/16W
R52	1-218-706-11	s	METAL 3.9K 0.50% 1/16W
R54	1-216-855-11	s	METAL, CHIP 680K 5% 1/16W
R55	1-218-706-11	s	METAL 3.9K 0.50% 1/16W
R56	1-218-692-11	s	CHIP, METAL 1K 0.50% 1/16W

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Ref. No. or Q'ty	Part No.	SP	Description
R57	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R58	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R59	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R60	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R61	1-218-833-11	s	CHIP, METAL 270 0.50% 1/16W
R62	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R63	1-218-692-11	s	CHIP, METAL 1K 0.50% 1/16W
R64	1-216-849-11	s	METAL, CHIP 220K 5% 1/16W
R65	1-216-849-11	s	METAL, CHIP 220K 5% 1/16W
R66	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R67	1-218-881-11	s	CHIP, METAL 27K 0.50% 1/16W
R68	1-218-716-11	s	METAL 10K 0.50% 1/16W
R69	1-218-874-11	s	CHIP, METAL 13K 0.50% 1/16W
R71	1-216-864-11	s	METAL, CHIP 0 5% 1/16W
R77	1-216-864-11	s	METAL, CHIP 0 5% 1/16W
R78	1-218-692-11	s	CHIP, METAL 1K 0.50% 1/16W
R79	1-218-716-11	s	METAL 10K 0.50% 1/16W
R80	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R81	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R83	1-216-864-11	s	METAL, CHIP 0 5% 1/16W
R84	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R85	1-216-805-11	s	METAL, CHIP 47 5% 1/16W
R86	1-216-805-11	s	METAL, CHIP 47 5% 1/16W
R90	1-216-805-11	s	METAL, CHIP 47 5% 1/16W
R92	1-216-805-11	s	METAL, CHIP 47 5% 1/16W
R95	1-218-692-11	s	CHIP, METAL 1K 0.50% 1/16W
R96	1-218-716-11	s	METAL 10K 0.50% 1/16W
R97	1-218-716-11	s	METAL 10K 0.50% 1/16W
R98	1-218-716-11	s	METAL 10K 0.50% 1/16W
R99	1-218-883-11	s	METAL 33K 0.50% 1/16W
R100	1-218-692-11	s	CHIP, METAL 1K 0.50% 1/16W
R101	1-218-692-11	s	CHIP, METAL 1K 0.50% 1/16W
R102	1-218-740-11	s	METAL 100K 0.50% 1/16W
R103	1-218-732-11	s	METAL 47K 0.50% 1/16W
R104	1-218-710-11	s	CHIP, METAL 5.6K 0.50% 1/16W
R105	1-218-716-11	s	METAL 10K 0.50% 1/16W
R106	1-218-710-11	s	CHIP, METAL 5.6K 0.50% 1/16W
R107	1-218-710-11	s	CHIP, METAL 5.6K 0.50% 1/16W
R108	1-218-700-11	s	METAL 2.2K 0.50% 1/16W
R109	1-218-732-11	s	METAL 47K 0.50% 1/16W
R110	1-216-805-11	s	METAL, CHIP 47 5% 1/16W
R111	1-216-805-11	s	METAL, CHIP 47 5% 1/16W
R112	1-216-805-11	s	METAL, CHIP 47 5% 1/16W
R113	1-216-857-11	s	METAL, CHIP 1M 5% 1/16W
R114	1-216-805-11	s	METAL, CHIP 47 5% 1/16W
R115	1-218-692-11	s	CHIP, METAL 1K 0.50% 1/16W
R116	1-216-805-11	s	METAL, CHIP 47 5% 1/16W
R117	1-218-716-11	s	METAL 10K 0.50% 1/16W
R118	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R119	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R121	1-216-857-11	s	METAL, CHIP 1M 5% 1/16W
R122	1-218-692-11	s	CHIP, METAL 1K 0.50% 1/16W
R123	1-218-716-11	s	METAL 10K 0.50% 1/16W
R124	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R126	1-216-797-11	s	METAL, CHIP 10 5% 1/16W
R127	1-218-692-11	s	CHIP, METAL 1K 0.50% 1/16W
R128	1-218-692-11	s	CHIP, METAL 1K 0.50% 1/16W
R129	1-216-849-11	s	METAL, CHIP 220K 5% 1/16W
R130	1-216-857-11	s	METAL, CHIP 1M 5% 1/16W
R131	1-216-857-11	s	METAL, CHIP 1M 5% 1/16W
R132	1-218-732-11	s	METAL 47K 0.50% 1/16W
R133	1-216-864-11	s	METAL, CHIP 0 5% 1/16W
R134	1-216-805-11	s	METAL, CHIP 47 5% 1/16W
R135	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R136	1-216-849-11	s	METAL, CHIP 220K 5% 1/16W
R137	1-216-849-11	s	METAL, CHIP 220K 5% 1/16W
R138	1-218-692-11	s	CHIP, METAL 1K 0.50% 1/16W
R139	1-218-697-11	s	METAL 1.6K 0.50% 1/16W
R140	1-218-899-11	s	CHIP, METAL 150K 0.50% 1/16W
R141	1-218-868-11	s	CHIP, METAL 7.5K 0.50% 1/16W
R144	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R145	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R146	1-216-864-11	s	METAL, CHIP 0 5% 1/16W
R148	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R149	1-216-864-11	s	METAL, CHIP 0 5% 1/16W
R150	1-216-864-11	s	METAL, CHIP 0 5% 1/16W
R151	1-218-732-11	s	METAL 47K 0.50% 1/16W
R152	1-218-732-11	s	METAL 47K 0.50% 1/16W
R153	1-218-732-11	s	METAL 47K 0.50% 1/16W
R154	1-218-732-11	s	METAL 47K 0.50% 1/16W
R200	1-218-692-11	s	CHIP, METAL 1K 0.50% 1/16W
R201	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R202	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R203	1-216-829-11	s	METAL, CHIP 4.7K 5% 1/16W
R204	1-218-716-11	s	METAL 10K 0.50% 1/16W
R205	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R206	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R207	1-216-829-11	s	METAL, CHIP 4.7K 5% 1/16W
R208	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R209	1-218-716-11	s	METAL 10K 0.50% 1/16W
R210	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R211	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
RB1	1-239-409-11	s	NETWORK, RESISTOR (CHIP TYPE)
RB2	1-239-409-11	s	NETWORK, RESISTOR (CHIP TYPE)
RB3	1-239-409-11	s	NETWORK, RESISTOR (CHIP TYPE)
RB4	1-239-409-11	s	NETWORK, RESISTOR (CHIP TYPE)
RB5	1-239-409-11	s	NETWORK, RESISTOR (CHIP TYPE)
RB10	1-239-409-11	s	NETWORK, RESISTOR (CHIP TYPE)

SW-730 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	1-657-443-21	o	PRINTED CIRCUIT BOARD, SW-730
C1	1-164-156-11	s	CERAMIC 0.1uF 25V
C3	1-164-156-11	s	CERAMIC 0.1uF 25V
CN801	1-764-082-21	s	PIN, CONNECTOR (PC BOARD) 11P
D1	8-719-106-43	s	DIODE RD9.1M-B1
IC1	8-759-175-04	s	IC PCF8574T-T
R1	1-216-827-11	s	METAL, CHIP 3.3K 5% 1/16W
R2	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R3	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R4	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R5	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R6	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R7	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R8	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R9	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R10	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R11	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R12	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R13	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R14	1-216-849-11	s	METAL, CHIP 220K 5% 1/16W
R15	1-216-849-11	s	METAL, CHIP 220K 5% 1/16W
S1	1-571-415-11	s	SWITCH, TOGGLE
S2	1-571-415-11	s	SWITCH, TOGGLE
S3	1-571-415-11	s	SWITCH, TOGGLE
S4	1-571-415-11	s	SWITCH, TOGGLE

SW-731 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	1-657-444-21	o	PRINTED CIRCUIT BOARD, SW-731
C1	1-164-156-11	s	CERAMIC 0.1uF 25V
C3	1-162-927-11	s	CERAMIC, CHIP 100PF 5% 50V
C4	1-164-156-11	s	CERAMIC 0.1uF 25V
CN501	1-695-207-21	o	PIN, CONNECTOR (PC BOARD) 6P
IC1	8-759-175-04	s	IC PCF8574T-T
R1	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R2	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R3	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R4	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R5	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R6	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R7	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R8	1-216-864-11	s	METAL, CHIP 0 5% 1/16W
R9	1-216-849-11	s	METAL, CHIP 220K 5% 1/16W
R10	1-216-849-11	s	METAL, CHIP 220K 5% 1/16W
R11	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
RV1	1-223-686-11	s	RES, VAR, CARBON 5K/5K
S1	1-571-416-11	s	SWITCH, TOGGLE
S2	1-571-679-11	s	SWITCH, TOGGLE
S3	1-570-282-21	s	SWITCH, KEY BOARD

SW-732 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	1-657-442-22	o	PRINTED CIRCUIT BOARD, SW-732
C1	1-164-156-11	s	CERAMIC 0.1uF 25V
C2	1-164-156-11	s	CERAMIC 0.1uF 25V
CN301	1-750-635-21	o	PIN, CONNECTOR (PC BOARD) 5P
IC1	8-759-175-04	s	IC PCF8574T-T
R1	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R2	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R3	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R4	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R5	1-216-849-11	s	METAL, CHIP 220K 5% 1/16W
R6	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R7	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R8	1-216-849-11	s	METAL, CHIP 220K 5% 1/16W
R9	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R10	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
S1	1-570-985-11	s	SWITCH, TOGGLE
S2	1-570-985-11	s	SWITCH, TOGGLE
S3	1-571-396-11	s	SWITCH, TOGGLE

SW-733 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	1-657-445-21	o	PRINTED CIRCUIT BOARD, SW-733
CN701	1-764-079-21	s	PIN, CONNECTOR (PC BOARD) 4P
S1	1-473-315-11	s	ENCODER, ROTARY

SW-742 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	1-657-446-21	o	PRINTED CIRCUIT BOARD, SW-742
CN601	1-764-078-11	s	PIN, CONNECTOR (PC BOARD) 3P
S1	1-554-088-00	s	SWITCH, TACTILE

VA-163 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-8272-560-A	o	MOUNTED CIRCUIT BOARD, VA-163
1pc	3-692-125-02	o	PANEL,VA-163 PC BOARD
1pc	3-724-753-01	o	RING
6pcs	3-729-061-01	s	SCREW (M2X4.5) (TYPE 1)
C1	1-135-216-11	s	TANTALUM, CHIP 10uF 20% 10V
C2	1-164-156-11	s	CERAMIC 0.1uF 25V
C3	1-164-156-11	s	CERAMIC 0.1uF 25V
C4	1-135-216-11	s	TANTALUM, CHIP 10uF 20% 10V
C5	1-135-216-11	s	TANTALUM, CHIP 10uF 20% 10V
C6	1-135-216-11	s	TANTALUM, CHIP 10uF 20% 10V
C7	1-164-156-11	s	CERAMIC 0.1uF 25V
C8	1-164-156-11	s	CERAMIC 0.1uF 25V
C9	1-135-217-21	s	TANTAL 15uF 20% 6.3
C10	1-164-156-11	s	CERAMIC 0.1uF 25V
C11	1-135-161-21	s	TANTALUM, CHIP 22uF 10% 10V
C12	1-126-391-11	s	ELECT 47uF 20% 6.3V
C13	1-135-177-21	s	TANTALUM, CHIP 1uF 10% 25V
C14	1-135-177-21	s	TANTALUM, CHIP 1uF 10% 25V
C15	1-135-125-21	s	TANTAL 33uF 20% 10V
C16	1-135-161-21	s	TANTALUM, CHIP 22uF 10% 10V
C17	1-126-391-11	s	ELECT 47uF 20% 6.3V
C18	1-164-156-11	s	CERAMIC 0.1uF 25V
C19	1-135-177-21	s	TANTALUM, CHIP 1uF 10% 25V
C20	1-135-216-11	s	TANTALUM, CHIP 10uF 20% 10V
C21	1-164-156-11	s	CERAMIC 0.1uF 25V
C22	1-164-156-11	s	CERAMIC 0.1uF 25V
C23	1-164-156-11	s	CERAMIC 0.1uF 25V
C24	1-135-216-11	s	TANTALUM, CHIP 10uF 20% 10V
C25	1-164-156-11	s	CERAMIC 0.1uF 25V
C26	1-164-217-11	s	CERAMIC 150PF 5% 50V
C27	1-162-927-11	s	CERAMIC, CHIP 100PF 5% 50V
C30	1-164-156-11	s	CERAMIC 0.1uF 25V
C31	1-162-927-11	s	CERAMIC, CHIP 100PF 5% 50V
C32	1-164-156-11	s	CERAMIC 0.1uF 25V
C40	1-135-211-11	s	TANTALUM, CHIP 6.8uF 20% 6.3V
C41	1-164-156-11	s	CERAMIC 0.1uF 25V
C42	1-164-156-11	s	CERAMIC 0.1uF 25V
C43	1-164-156-11	s	CERAMIC 0.1uF 25V
C44	1-164-156-11	s	CERAMIC 0.1uF 25V
C45	1-164-156-11	s	CERAMIC 0.1uF 25V
C46	1-135-070-00	s	TANTALUM, CHIP 0.1uF 10% 35V
C47	1-162-964-11	s	CERAMIC 0.001uF 10% 50V
C48	1-164-156-11	s	CERAMIC 0.1uF 25V
C49	1-164-156-11	s	CERAMIC 0.1uF 25V
C50	1-135-211-11	s	TANTALUM, CHIP 6.8uF 20% 6.3V
C51	1-135-211-11	s	TANTALUM, CHIP 6.8uF 20% 6.3V
C52	1-104-559-11	s	FILM, CHIP 0.047uF 5% 16V
C53	1-164-315-11	s	CERAMIC 470PF 5% 50V
C54	1-164-156-11	s	CERAMIC 0.1uF 25V
C55	1-164-156-11	s	CERAMIC 0.1uF 25V
C56	1-135-177-21	s	TANTALUM, CHIP 1uF 10% 25V
C57	1-135-177-21	s	TANTALUM, CHIP 1uF 10% 25V
C58	1-135-177-21	s	TANTALUM, CHIP 1uF 10% 25V
C59	1-164-156-11	s	CERAMIC 0.1uF 25V
C60	1-164-156-11	s	CERAMIC 0.1uF 25V
C61	1-164-156-11	s	CERAMIC 0.1uF 25V
C62	1-164-156-11	s	CERAMIC 0.1uF 25V
C63	1-164-156-11	s	CERAMIC 0.1uF 25V
C64	1-164-156-11	s	CERAMIC 0.1uF 25V

(VA-163 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
C65	1-135-217-21	s	TANTAL 15uF 20% 6.3
C66	1-135-217-21	s	TANTAL 15uF 20% 6.3
C67	1-135-217-21	s	TANTAL 15uF 20% 6.3
C68	1-164-156-11	s	CERAMIC 0.1uF 25V
C69	1-135-217-21	s	TANTAL 15uF 20% 6.3
C70	1-135-217-21	s	TANTAL 15uF 20% 6.3
C71	1-135-217-21	s	TANTAL 15uF 20% 6.3
C72	1-164-156-11	s	CERAMIC 0.1uF 25V
C73	1-162-918-11	s	CERAMIC, CHIP 18PF 5% 50V
C124	1-107-685-11	s	TANTALUM 15uF 20% 6.3V
C125	1-107-685-11	s	TANTALUM 15uF 20% 6.3V
C200	1-135-214-21	s	TANTAL 4.7uF 20% 20V
C201	1-164-156-11	s	CERAMIC 0.1uF 25V
C202	1-135-165-11	s	TANTALUM, CHIP 33uF 10% 16V
C203	1-164-156-11	s	CERAMIC 0.1uF 25V
C204	1-135-157-21	s	TANTAL 10uF 10% 6.3V
C205	1-164-156-11	s	CERAMIC 0.1uF 25V
C207	1-162-920-11	s	CERAMIC, CHIP 27PF 5% 50V
C208	1-126-392-11	s	ELECT, CHIP 100uF 20% 6.3V
C209	1-162-908-11	s	CERAMIC 3PF 0.25PF 50V
C211	1-135-177-21	s	TANTALUM, CHIP 1uF 10% 25V
C212	1-164-156-11	s	CERAMIC 0.1uF 25V
C214	1-135-177-21	s	TANTALUM, CHIP 1uF 10% 25V
C215	1-135-177-21	s	TANTALUM, CHIP 1uF 10% 25V
C216	1-164-156-11	s	CERAMIC 0.1uF 25V
C217	1-162-909-11	s	CERAMIC 4PF 0.25PF 50V
C218	1-164-156-11	s	CERAMIC 0.1uF 25V
C219	1-164-156-11	s	CERAMIC 0.1uF 25V
C220	1-164-156-11	s	CERAMIC 0.1uF 25V
C221	1-164-156-11	s	CERAMIC 0.1uF 25V
C223	1-164-156-11	s	CERAMIC 0.1uF 25V
C224	1-104-608-11	s	ELECT 33uF 20% 6.3V
C225	1-135-217-21	s	TANTAL 15uF 20% 6.3
C226	1-135-217-21	s	TANTAL 15uF 20% 6.3
C227	1-164-156-11	s	CERAMIC 0.1uF 25V
C228	1-135-162-21	s	TANTALUM, CHIP 33uF 10% 6.3V
C229	1-135-157-21	s	TANTAL 10uF 10% 6.3V
C230	1-135-177-21	s	TANTALUM, CHIP 1uF 10% 25V
C231	1-135-177-21	s	TANTALUM, CHIP 1uF 10% 25V
C232	1-135-161-21	s	TANTALUM, CHIP 22uF 10% 10V
C233	1-164-156-11	s	CERAMIC 0.1uF 25V
C234	1-164-156-11	s	CERAMIC 0.1uF 25V
C235	1-164-156-11	s	CERAMIC 0.1uF 25V
C236	1-164-156-11	s	CERAMIC 0.1uF 25V
C237	1-164-156-11	s	CERAMIC 0.1uF 25V
C238	1-135-177-21	s	TANTALUM, CHIP 1uF 10% 25V
C239	1-135-177-21	s	TANTALUM, CHIP 1uF 10% 25V
C240	1-162-924-11	s	CERAMIC 56PF 5% 50V
C242	1-135-092-21	s	TANTALUM, CHIP 3.3uF 10% 16V
C243	1-135-210-11	s	TANTALUM 4.7uF 10% 10V
C259	1-135-177-21	s	TANTALUM, CHIP 1uF 10% 25V
C300	1-135-214-21	s	TANTAL 4.7uF 20% 20V
C301	1-164-156-11	s	CERAMIC 0.1uF 25V
C302	1-135-165-11	s	TANTALUM, CHIP 33uF 10% 16V
C303	1-164-156-11	s	CERAMIC 0.1uF 25V
C304	1-135-157-21	s	TANTAL 10uF 10% 6.3V
C305	1-164-156-11	s	CERAMIC 0.1uF 25V
C307	1-162-920-11	s	CERAMIC, CHIP 27PF 5% 50V
C308	1-126-392-11	s	ELECT, CHIP 100uF 20% 6.3V

(VA-163 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
C309	1-162-908-11	s	CERAMIC 3PF 0.25PF 50V
C311	1-135-177-21	s	TANTALUM, CHIP 1uF 10% 25V
C312	1-164-156-11	s	CERAMIC 0.1uF 25V
C314	1-135-177-21	s	TANTALUM, CHIP 1uF 10% 25V
C315	1-135-177-21	s	TANTALUM, CHIP 1uF 10% 25V
C316	1-164-156-11	s	CERAMIC 0.1uF 25V
C317	1-162-909-11	s	CERAMIC 4PF 0.25PF 50V
C318	1-164-156-11	s	CERAMIC 0.1uF 25V
C319	1-164-156-11	s	CERAMIC 0.1uF 25V
C320	1-164-156-11	s	CERAMIC 0.1uF 25V
C321	1-164-156-11	s	CERAMIC 0.1uF 25V
C323	1-164-156-11	s	CERAMIC 0.1uF 25V
C324	1-104-608-11	s	ELECT 33uF 20% 6.3V
C325	1-135-217-21	s	TANTAL 15uF 20% 6.3
C326	1-135-217-21	s	TANTAL 15uF 20% 6.3
C327	1-164-156-11	s	CERAMIC 0.1uF 25V
C328	1-135-162-21	s	TANTALUM, CHIP 33uF 10% 6.3V
C329	1-135-157-21	s	TANTAL 10uF 10% 6.3V
C330	1-135-177-21	s	TANTALUM, CHIP 1uF 10% 25V
C331	1-135-177-21	s	TANTALUM, CHIP 1uF 10% 25V
C332	1-104-852-11	s	TANTALUM, CHIP 22uF 20% 10V
C333	1-164-156-11	s	CERAMIC 0.1uF 25V
C334	1-164-156-11	s	CERAMIC 0.1uF 25V
C335	1-164-156-11	s	CERAMIC 0.1uF 25V
C336	1-164-156-11	s	CERAMIC 0.1uF 25V
C337	1-164-156-11	s	CERAMIC 0.1uF 25V
C338	1-135-177-21	s	TANTALUM, CHIP 1uF 10% 25V
C339	1-135-177-21	s	TANTALUM, CHIP 1uF 10% 25V
C340	1-162-924-11	s	CERAMIC 56PF 5% 50V
C342	1-135-092-21	s	TANTALUM, CHIP 3.3uF 10% 16V
C343	1-135-210-11	s	TANTALUM 4.7uF 10% 10V
C359	1-135-177-21	s	TANTALUM, CHIP 1uF 10% 25V
C400	1-135-214-21	s	TANTAL 4.7uF 20% 20V
C401	1-164-156-11	s	CERAMIC 0.1uF 25V
C402	1-135-165-11	s	TANTALUM, CHIP 33uF 10% 16V
C403	1-164-156-11	s	CERAMIC 0.1uF 25V
C404	1-135-157-21	s	TANTAL 10uF 10% 6.3V
C405	1-164-156-11	s	CERAMIC 0.1uF 25V
C407	1-162-920-11	s	CERAMIC, CHIP 27PF 5% 50V
C408	1-126-392-11	s	ELECT, CHIP 100uF 20% 6.3V
C409	1-162-908-11	s	CERAMIC 3PF 0.25PF 50V
C411	1-135-177-21	s	TANTALUM, CHIP 1uF 10% 25V
C412	1-164-156-11	s	CERAMIC 0.1uF 25V
C414	1-135-177-21	s	TANTALUM, CHIP 1uF 10% 25V
C415	1-135-177-21	s	TANTALUM, CHIP 1uF 10% 25V
C416	1-164-156-11	s	CERAMIC 0.1uF 25V
C417	1-162-909-11	s	CERAMIC 4PF 0.25PF 50V
C418	1-164-156-11	s	CERAMIC 0.1uF 25V
C419	1-164-156-11	s	CERAMIC 0.1uF 25V
C420	1-164-156-11	s	CERAMIC 0.1uF 25V
C421	1-164-156-11	s	CERAMIC 0.1uF 25V
C423	1-164-156-11	s	CERAMIC 0.1uF 25V
C424	1-104-608-11	s	ELECT 33uF 20% 6.3V
C425	1-135-217-21	s	TANTAL 15uF 20% 6.3
C426	1-135-217-21	s	TANTAL 15uF 20% 6.3
C427	1-164-156-11	s	CERAMIC 0.1uF 25V
C428	1-135-162-21	s	TANTALUM, CHIP 33uF 10% 6.3V
C429	1-135-157-21	s	TANTAL 10uF 10% 6.3V
C430	1-135-177-21	s	TANTALUM, CHIP 1uF 10% 25V

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Ref. No. or Q'ty	Part No.	SP	Description
C431	1-135-177-21	s	TANTALUM, CHIP 1uF 10% 25V
C432	1-104-852-11	s	TANTALUM, CHIP 22uF 20% 10V
C433	1-164-156-11	s	CERAMIC 0.1uF 25V
C434	1-164-156-11	s	CERAMIC 0.1uF 25V
C435	1-164-156-11	s	CERAMIC 0.1uF 25V
C436	1-164-156-11	s	CERAMIC 0.1uF 25V
C437	1-164-156-11	s	CERAMIC 0.1uF 25V
C438	1-135-177-21	s	TANTALUM, CHIP 1uF 10% 25V
C439	1-135-177-21	s	TANTALUM, CHIP 1uF 10% 25V
C440	1-162-924-11	s	CERAMIC 56PF 5% 50V
C442	1-135-092-21	s	TANTALUM, CHIP 3.3uF 10% 16V
C443	1-135-210-11	s	TANTALUM 4.7uF 10% 10V
C459	1-135-177-21	s	TANTALUM, CHIP 1uF 10% 25V
CT200	1-141-311-11	s	CAP, VAR, TRIMMER
CT300	1-141-311-11	s	CAP, VAR, TRIMMER
CT400	1-141-311-11	s	CAP, VAR, TRIMMER
D1	8-719-029-63	s	DIODE RD4.3UH-T1
D2	8-719-029-63	s	DIODE RD4.3UH-T1
D3	8-719-029-63	s	DIODE RD4.3UH-T1
D4	8-719-029-63	s	DIODE RD4.3UH-T1
D5	8-719-820-41	s	DIODE 1SS302
D7	8-719-974-76	s	DIODE HSM107S
D8	8-719-820-41	s	DIODE 1SS302
D9	8-719-820-41	s	DIODE 1SS302
D10	8-719-820-41	s	DIODE 1SS302
FL200	1-402-639-11	s	FILTER, TRAP
FL300	1-402-639-11	s	FILTER, TRAP
FL400	1-402-639-11	s	FILTER, TRAP
IC1	8-759-076-06	s	IC TL064CPW
IC3	8-759-066-68	s	IC REF-03GS
IC5	8-759-180-08	s	IC TC74HC4538AFS
IC6	8-759-175-02	s	IC TL074CPW-ELM1000
IC7	8-759-058-64	s	IC TC7S32FU(TE85R)
IC8	8-759-082-60	s	IC TC7S66FU
IC9	8-759-085-67	s	IC LM339NS
IC10	8-759-058-58	s	IC TC7S04FU(TE85R)
IC11	8-759-058-58	s	IC TC7S04FU(TE85R)
IC12	8-759-175-02	s	IC TL074CPW-ELM1000
IC13	8-759-082-60	s	IC TC7S66FU
IC14	8-759-082-60	s	IC TC7S66FU
IC15	8-759-076-06	s	IC TL064CPW
IC16	8-759-326-65	s	IC MP7670AS-TE2
IC17	8-759-066-59	s	IC TC74HC4053AFS
IC18	8-759-326-65	s	IC MP7670AS-TE2
IC19	8-759-175-02	s	IC TL074CPW-ELM1000
IC20	8-759-237-79	s	IC TC74HC595AF(EL)
IC21	8-759-064-36	s	IC MB88346BPFV
IC22	8-759-066-59	s	IC TC74HC4053AFS
IC23	8-759-049-60	s	IC SN74HC08APW-E05
IC24	8-759-059-50	s	IC MB88351PFV
IC25	8-759-058-58	s	IC TC7S04FU(TE85R)
IC26	8-759-086-42	s	IC X24C02S-3.0-C7000
IC27	8-759-058-62	s	IC TC7S08FU(TE85R)
IC200	8-759-076-06	s	IC TL064CPW
IC201	8-759-082-61	s	IC TC4W53FU
IC202	8-752-068-64	s	IC CXA1486Q-TH
IC203	8-759-082-61	s	IC TC4W53FU
IC204	8-759-058-62	s	IC TC7S08FU(TE85R)

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Ref. No. or Q'ty	Part No.	SP	Description
IC300	8-759-076-06	s	IC TL064CPW
IC301	8-759-082-61	s	IC TC4W53FU
IC302	8-752-068-64	s	IC CXA1486Q-TH
IC303	8-759-082-61	s	IC TC4W53FU
IC304	8-759-058-62	s	IC TC7S08FU(TE85R)
IC400	8-759-076-06	s	IC TL064CPW
IC401	8-759-082-61	s	IC TC4W53FU
IC402	8-752-068-64	s	IC CXA1486Q-TH
IC403	8-759-082-61	s	IC TC4W53FU
IC404	8-759-058-62	s	IC TC7S08FU(TE85R)
L1	1-410-385-11	s	INDUCTOR, CHIP 22uH
L2	1-410-385-11	s	INDUCTOR, CHIP 22uH
Q1	8-729-141-48	s	TRANSISTOR 2SB624-BV345
Q2	8-729-820-86	s	TRANSISTOR 2SB1121-ST
Q3	8-729-141-75	s	TRANSISTOR 2SD596DV345
Q4	8-729-117-32	s	TRANSISTOR 2SC4177
Q5	8-729-402-78	s	TRANSISTOR XN6401
Q7	8-729-141-75	s	TRANSISTOR 2SD596DV345
Q10	8-729-402-78	s	TRANSISTOR XN6401
Q11	8-729-402-19	s	TRANSISTOR XN6501
Q12	8-729-402-19	s	TRANSISTOR XN6501
Q13	8-729-402-19	s	TRANSISTOR XN6501
Q14	8-729-402-78	s	TRANSISTOR XN6401
Q200	8-729-117-16	s	TRANSISTOR 2SA1611-M6
Q201	8-729-175-73	s	TRANSISTOR 2SC2757
Q202	8-729-122-63	s	TRANSISTOR 2SA1226
Q203	8-729-117-16	s	TRANSISTOR 2SA1611-M6
Q204	8-729-122-63	s	TRANSISTOR 2SA1226
Q205	8-729-122-63	s	TRANSISTOR 2SA1226
Q206	8-729-117-73	s	TRANSISTOR 2SC4178-F14
Q207	8-729-143-07	s	TRANSISTOR 2SA1610-Y33
Q208	8-729-117-32	s	TRANSISTOR 2SC4177
Q209	8-729-117-73	s	TRANSISTOR 2SC4178-F14
Q210	8-729-117-73	s	TRANSISTOR 2SC4178-F14
Q211	8-729-117-73	s	TRANSISTOR 2SC4178-F14
Q212	8-729-117-73	s	TRANSISTOR 2SC4178-F14
Q213	8-729-117-73	s	TRANSISTOR 2SC4178-F14
Q214	8-729-117-73	s	TRANSISTOR 2SC4178-F14
Q215	8-729-117-73	s	TRANSISTOR 2SC4178-F14
Q216	8-729-117-73	s	TRANSISTOR 2SC4178-F14
Q217	8-729-117-73	s	TRANSISTOR 2SC4178-F14
Q218	8-729-117-16	s	TRANSISTOR 2SA1611-M6
Q219	8-729-402-19	s	TRANSISTOR XN6501
Q220	8-729-402-19	s	TRANSISTOR XN6501
Q300	8-729-117-16	s	TRANSISTOR 2SA1611-M6
Q301	8-729-175-73	s	TRANSISTOR 2SC2757
Q302	8-729-122-63	s	TRANSISTOR 2SA1226
Q303	8-729-117-16	s	TRANSISTOR 2SA1611-M6
Q304	8-729-122-63	s	TRANSISTOR 2SA1226
Q305	8-729-122-63	s	TRANSISTOR 2SA1226
Q306	8-729-117-73	s	TRANSISTOR 2SC4178-F14
Q307	8-729-143-07	s	TRANSISTOR 2SA1610-Y33
Q308	8-729-117-32	s	TRANSISTOR 2SC4177
Q309	8-729-117-73	s	TRANSISTOR 2SC4178-F14
Q310	8-729-117-73	s	TRANSISTOR 2SC4178-F14
Q311	8-729-117-73	s	TRANSISTOR 2SC4178-F14
Q312	8-729-117-73	s	TRANSISTOR 2SC4178-F14
Q313	8-729-117-73	s	TRANSISTOR 2SC4178-F14

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Ref. No. or Q'ty	Part No.	SP	Description
Q314	8-729-117-73	s	TRANSISTOR 2SC4178-F14
Q315	8-729-117-73	s	TRANSISTOR 2SC4178-F14
Q316	8-729-117-73	s	TRANSISTOR 2SC4178-F14
Q317	8-729-117-73	s	TRANSISTOR 2SC4178-F14
Q318	8-729-117-16	s	TRANSISTOR 2SA1611-M6
Q319	8-729-402-19	s	TRANSISTOR XN6501
Q320	8-729-402-19	s	TRANSISTOR XN6501
Q400	8-729-117-16	s	TRANSISTOR 2SA1611-M6
Q401	8-729-175-73	s	TRANSISTOR 2SC2757
Q402	8-729-122-63	s	TRANSISTOR 2SA1226
Q403	8-729-117-16	s	TRANSISTOR 2SA1611-M6
Q404	8-729-122-63	s	TRANSISTOR 2SA1226
Q405	8-729-122-63	s	TRANSISTOR 2SA1226
Q406	8-729-117-73	s	TRANSISTOR 2SC4178-F14
Q407	8-729-143-07	s	TRANSISTOR 2SA1610-Y33
Q408	8-729-117-32	s	TRANSISTOR 2SC4177
Q409	8-729-117-73	s	TRANSISTOR 2SC4178-F14
Q410	8-729-117-73	s	TRANSISTOR 2SC4178-F14
Q411	8-729-117-73	s	TRANSISTOR 2SC4178-F14
Q412	8-729-117-73	s	TRANSISTOR 2SC4178-F14
Q413	8-729-117-73	s	TRANSISTOR 2SC4178-F14
Q414	8-729-117-73	s	TRANSISTOR 2SC4178-F14
Q415	8-729-117-73	s	TRANSISTOR 2SC4178-F14
Q416	8-729-117-73	s	TRANSISTOR 2SC4178-F14
Q417	8-729-117-73	s	TRANSISTOR 2SC4178-F14
Q418	8-729-117-16	s	TRANSISTOR 2SA1611-M6
Q419	8-729-402-19	s	TRANSISTOR XN6501
Q420	8-729-402-19	s	TRANSISTOR XN6501
R1	1-218-723-11	s	METAL 20K 0.50% 1/16W
R2	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R3	1-218-724-11	s	CHIP, METAL 22K 5% 1/16W
R4	1-218-716-11	s	METAL 10K 0.50% 1/16W
R5	1-218-732-11	s	METAL 47K 0.50% 1/16W
R6	1-218-724-11	s	CHIP, METAL 22K 5% 1/16W
R7	1-218-716-11	s	METAL 10K 0.50% 1/16W
R8	1-218-716-11	s	METAL 10K 0.50% 1/16W
R9	1-216-823-11	s	METAL, CHIP 1.5K 5% 1/16W
R10	1-218-724-11	s	CHIP, METAL 22K 5% 1/16W
R11	1-218-716-11	s	METAL 10K 0.50% 1/16W
R12	1-218-716-11	s	METAL 10K 0.50% 1/16W
R13	1-218-668-11	s	CHIP, METAL 100 0.50% 1/16W
R14	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R15	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R16	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R17	1-216-829-11	s	METAL, CHIP 4.7K 5% 1/16W
R18	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R19	1-211-969-11	s	CHIP, METAL 10 0.50% 1/16W
R20	1-218-716-11	s	METAL 10K 0.50% 1/16W
R21	1-216-827-11	s	METAL, CHIP 3.3K 5% 1/16W
R22	1-211-969-11	s	CHIP, METAL 10 0.50% 1/16W
R23	1-218-700-11	s	METAL 2.2K 0.50% 1/16W
R24	1-218-704-11	s	METAL 3.3K 0.50% 1/16W
R25	1-218-716-11	s	METAL 10K 0.50% 1/16W
R26	1-218-700-11	s	METAL 2.2K 0.50% 1/16W
R27	1-218-692-11	s	CHIP, METAL 1K 0.50% 1/16W
R28	1-218-716-11	s	METAL 10K 0.50% 1/16W
R29	1-218-714-11	s	METAL 8.2K 0.50% 1/16W
R30	1-218-716-11	s	METAL 10K 0.50% 1/16W

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Ref. No. or Q'ty	Part No.	SP	Description
R31	1-218-700-11	s	METAL 2.2K 0.50% 1/16W
R35	1-218-668-11	s	CHIP, METAL 100 0.50% 1/16W
R36	1-218-668-11	s	CHIP, METAL 100 0.50% 1/16W
R37	1-218-668-11	s	CHIP, METAL 100 0.50% 1/16W
R38	1-218-692-11	s	CHIP, METAL 1K 0.50% 1/16W
R39	1-216-857-11	s	METAL, CHIP 1M 5% 1/16W
R40	1-218-668-11	s	CHIP, METAL 100 0.50% 1/16W
R41	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R42	1-218-873-11	s	CHIP, METAL 12K 0.50% 1/16W
R43	1-218-851-11	s	CHIP, METAL 1.5K 0.50% 1/16W
R44	1-218-851-11	s	CHIP, METAL 1.5K 0.50% 1/16W
R45	1-218-851-11	s	CHIP, METAL 1.5K 0.50% 1/16W
R46	1-218-699-11	s	CHIP, METAL 2K 0.50% 1/16W
R47	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R48	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R49	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R50	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R51	1-218-692-11	s	CHIP, METAL 1K 0.50% 1/16W
R52	1-218-716-11	s	METAL 10K 0.50% 1/16W
R53	1-218-723-11	s	METAL 20K 0.50% 1/16W
R54	1-218-716-11	s	METAL 10K 0.50% 1/16W
R55	1-218-723-11	s	METAL 20K 0.50% 1/16W
R56	1-218-901-11	s	CHIP, METAL 180K 0.50% 1/16W
R57	1-218-732-11	s	METAL 47K 0.50% 1/16W
R58	1-218-716-11	s	METAL 10K 0.50% 1/16W
R59	1-218-732-11	s	METAL 47K 0.50% 1/16W
R60	1-218-732-11	s	METAL 47K 0.50% 1/16W
R61	1-208-854-11	s	CHIP,METAL 1M 0.50% 1/10W
R62	1-216-853-11	s	METAL, CHIP 470K 5% 1/16W
R63	1-218-883-11	s	METAL 33K 0.50% 1/16W
R64	1-218-883-11	s	METAL 33K 0.50% 1/16W
R65	1-218-699-11	s	CHIP, METAL 2K 0.50% 1/16W
R66	1-218-692-11	s	CHIP, METAL 1K 0.50% 1/16W
R67	1-218-699-11	s	CHIP, METAL 2K 0.50% 1/16W
R68	1-218-692-11	s	CHIP, METAL 1K 0.50% 1/16W
R69	1-218-699-11	s	CHIP, METAL 2K 0.50% 1/16W
R70	1-218-692-11	s	CHIP, METAL 1K 0.50% 1/16W
R71	1-218-883-11	s	METAL 33K 0.50% 1/16W
R72	1-216-864-11	s	METAL, CHIP 0 5% 1/16W
R73	1-216-864-11	s	METAL, CHIP 0 5% 1/16W
R74	1-216-864-11	s	METAL, CHIP 0 5% 1/16W
R75	1-218-883-11	s	METAL 33K 0.50% 1/16W
R76	1-218-883-11	s	METAL 33K 0.50% 1/16W
R77	1-218-883-11	s	METAL 33K 0.50% 1/16W
R78	1-218-708-11	s	METAL 4.7K 0.50% 1/16W
R79	1-218-708-11	s	METAL 4.7K 0.50% 1/16W
R80	1-218-708-11	s	METAL 4.7K 0.50% 1/16W
R81	1-218-708-11	s	METAL 4.7K 0.50% 1/16W
R82	1-218-708-11	s	METAL 4.7K 0.50% 1/16W
R83	1-218-708-11	s	METAL 4.7K 0.50% 1/16W
R84	1-218-883-11	s	METAL 33K 0.50% 1/16W
R85	1-218-883-11	s	METAL 33K 0.50% 1/16W
R86	1-218-883-11	s	METAL 33K 0.50% 1/16W
R87	1-218-883-11	s	METAL 33K 0.50% 1/16W
R88	1-218-883-11	s	METAL 33K 0.50% 1/16W
R89	1-218-883-11	s	METAL 33K 0.50% 1/16W
R90	1-218-883-11	s	METAL 33K 0.50% 1/16W
R91	1-218-716-11	s	METAL 10K 0.50% 1/16W
R92	1-218-716-11	s	METAL 10K 0.50% 1/16W

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Ref. No. or Q'ty	Part No.	SP	Description
R93	1-218-716-11	s	METAL 10K 0.50% 1/16W
R94	1-218-732-11	s	METAL 47K 0.50% 1/16W
R95	1-218-732-11	s	METAL 47K 0.50% 1/16W
R96	1-218-732-11	s	METAL 47K 0.50% 1/16W
R97	1-218-732-11	s	METAL 47K 0.50% 1/16W
R98	1-218-714-11	s	METAL 8.2K 0.50% 1/16W
R99	1-218-714-11	s	METAL 8.2K 0.50% 1/16W
R100	1-218-699-11	s	CHIP, METAL 2K 0.50% 1/16W
R101	1-218-873-11	s	METAL 12K 0.50% 1/16W
R102	1-218-692-11	s	CHIP, METAL 1K 0.50% 1/16W
R103	1-218-886-11	s	CHIP, METAL 43K 0.50% 1/16W
R104	1-216-829-11	s	METAL, CHIP 4.7K 5% 1/16W
R105	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R106	1-218-708-11	s	METAL 4.7K 0.50% 1/16W
R107	1-218-700-11	s	METAL 2.2K 0.50% 1/16W
R108	1-218-702-11	s	CHIP, METAL 2.7K 0.50% 1/16W
R109	1-218-716-11	s	METAL 10K 0.50% 1/16W
R110	1-218-702-11	s	CHIP, METAL 2.7K 0.50% 1/16W
R111	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R112	1-218-714-11	s	METAL 8.2K 0.50% 1/16W
R113	1-218-668-11	s	CHIP, METAL 100 0.50% 1/16W
R114	1-218-723-11	s	METAL 20K 0.50% 1/16W
R115	1-218-699-11	s	CHIP, METAL 2K 0.50% 1/16W
R116	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R117	1-218-702-11	s	CHIP, METAL 2.7K 0.50% 1/16W
R118	1-216-829-11	s	METAL, CHIP 4.7K 5% 1/16W
R120	1-218-704-11	s	METAL 3.3K 0.50% 1/16W
R121	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R122	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R123	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R200	1-218-692-11	s	CHIP, METAL 1K 0.50% 1/16W
R201	1-218-723-11	s	METAL 20K 0.50% 1/16W
R202	1-216-829-11	s	METAL, CHIP 4.7K 5% 1/16W
R203	1-216-830-11	s	METAL, CHIP 5.6K 5% 1/16W
R204	1-218-727-11	s	METAL 30K 0.50% 1/16W
R205	1-218-732-11	s	METAL 47K 0.50% 1/16W
R206	1-218-708-11	s	METAL 4.7K 0.50% 1/16W
R207	1-218-710-11	s	CHIP, METAL 5.6K 0.50% 1/16W
R208	1-218-856-11	s	CHIP, METAL 2.4K 0.50% 1/16W
R209	1-218-723-11	s	METAL 20K 0.50% 1/16W
R210	1-218-714-11	s	METAL 8.2K 0.50% 1/16W
R211	1-211-969-11	s	CHIP, METAL 10 0.50% 1/16W
R212	1-218-680-11	s	METAL 330 0.50% 1/16W
R213	1-218-851-11	s	CHIP, METAL 1.5K 0.50% 1/16W
R214	1-211-969-11	s	CHIP, METAL 10 0.50% 1/16W
R215	1-218-680-11	s	METAL 330 0.50% 1/16W
R216	1-218-692-11	s	CHIP, METAL 1K 0.50% 1/16W
R217	1-216-797-11	s	METAL, CHIP 10 5% 1/16W
R218	1-218-717-11	s	CHIP, METAL 11K 0.50% 1/16W
R219	1-218-699-11	s	CHIP, METAL 2K 0.50% 1/16W
R220	1-218-844-11	s	CHIP, METAL 750 0.50% 1/16W
R222	1-218-845-11	s	CHIP, METAL 820 0.50% 1/16W
R223	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R224	1-218-710-11	s	CHIP, METAL 5.6K 0.50% 1/16W
R225	1-218-883-11	s	METAL 33K 0.50% 1/16W
R226	1-218-716-11	s	METAL 10K 0.50% 1/16W
R227	1-218-699-11	s	CHIP, METAL 2K 0.50% 1/16W
R228	1-218-714-11	s	METAL 8.2K 0.50% 1/16W
R229	1-218-699-11	s	CHIP, METAL 2K 0.50% 1/16W

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Ref. No. or Q'ty	Part No.	SP	Description
R230	1-218-730-11	s	CHIP, METAL 39K 0.50% 1/16W
R231	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R232	1-218-692-11	s	CHIP, METAL 1K 0.50% 1/16W
R233	1-218-699-11	s	CHIP, METAL 2K 0.50% 1/16W
R234	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R235	1-218-672-11	s	METAL 150 0.50% 1/16W
R236	1-218-732-11	s	METAL 47K 0.50% 1/16W
R237	1-218-692-11	s	CHIP, METAL 1K 0.50% 1/16W
R238	1-218-699-11	s	CHIP, METAL 2K 0.50% 1/16W
R239	1-218-723-11	s	METAL 20K 0.50% 1/16W
R240	1-218-710-11	s	CHIP, METAL 5.6K 0.50% 1/16W
R241	1-218-699-11	s	CHIP, METAL 2K 0.50% 1/16W
R242	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R243	1-218-699-11	s	CHIP, METAL 2K 0.50% 1/16W
R244	1-218-842-11	s	CHIP, METAL 620 0.50% 1/16W
R245	1-218-751-11	s	METAL, CHIP 300K 0.50% 1/16
R246	1-218-716-11	s	METAL 10K 0.50% 1/16W
R247	1-218-723-11	s	METAL 20K 0.50% 1/16W
R248	1-216-825-11	s	METAL, CHIP 2.2K 5% 1/16W
R249	1-216-864-11	s	METAL, CHIP 0 5% 1/16W
R250	1-216-864-11	s	METAL, CHIP 0 5% 1/16W
R251	1-218-740-11	s	METAL 100K 0.50% 1/16W
R252	1-218-716-11	s	METAL 10K 0.50% 1/16W
R253	1-218-708-11	s	METAL 4.7K 0.50% 1/16W
R254	1-216-864-11	s	METAL, CHIP 0 5% 1/16W
R255	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R256	1-218-692-11	s	CHIP, METAL 1K 0.50% 1/16W
R257	1-218-858-11	s	CHIP, METAL 3K 0.50% 1/16W
R258	1-218-717-11	s	CHIP, METAL 11K 0.50% 1/16W
R259	1-218-723-11	s	METAL 20K 0.50% 1/16W
R260	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R261	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R262	1-218-727-11	s	METAL 30K 0.50% 1/16W
R263	1-218-692-11	s	CHIP, METAL 1K 0.50% 1/16W
R264	1-218-858-11	s	CHIP, METAL 3K 0.50% 1/16W
R265	1-218-723-11	s	METAL 20K 0.50% 1/16W
R266	1-218-716-11	s	METAL 10K 0.50% 1/16W
R267	1-218-698-11	s	METAL 1.8K 0.50% 1/16W
R268	1-218-704-11	s	METAL 3.3K 0.50% 1/16W
R269	1-218-692-11	s	CHIP, METAL 1K 0.50% 1/16W
R270	1-218-883-11	s	METAL 33K 0.50% 1/16W
R271	1-218-740-11	s	METAL 100K 0.50% 1/16W
R272	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R280	1-218-883-11	s	METAL 33K 0.50% 1/16W
R281	1-218-708-11	s	METAL 4.7K 0.50% 1/16W
R300	1-218-692-11	s	CHIP, METAL 1K 0.50% 1/16W
R301	1-218-723-11	s	METAL 20K 0.50% 1/16W
R302	1-216-829-11	s	METAL, CHIP 4.7K 5% 1/16W
R303	1-216-830-11	s	METAL, CHIP 5.6K 5% 1/16W
R304	1-218-710-11	s	CHIP, METAL 5.6K 0.50% 1/16W
R305	1-218-727-11	s	METAL 30K 0.50% 1/16W
R306	1-218-732-11	s	METAL 47K 0.50% 1/16W
R307	1-218-708-11	s	METAL 4.7K 0.50% 1/16W
R308	1-218-856-11	s	CHIP, METAL 2.4K 0.50% 1/16W
R309	1-218-874-11	s	CHIP, METAL 13K 0.50% 1/16W
R310	1-218-714-11	s	METAL 8.2K 0.50% 1/16W
R311	1-211-969-11	s	CHIP, METAL 10 0.50% 1/16W
R312	1-218-680-11	s	METAL 330 0.50% 1/16W
R313	1-218-851-11	s	CHIP, METAL 1.5K 0.50% 1/16W

(VA-163 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R314	1-211-969-11	s	CHIP, METAL 10 0.50% 1/16W
R315	1-218-680-11	s	METAL 330 0.50% 1/16W
R316	1-218-692-11	s	CHIP, METAL 1K 0.50% 1/16W
R317	1-216-797-11	s	METAL, CHIP 10 5% 1/16W
R318	1-218-717-11	s	CHIP, METAL 11K 0.50% 1/16W
R319	1-218-699-11	s	CHIP, METAL 2K 0.50% 1/16W
R320	1-218-844-11	s	CHIP, METAL 750 0.50% 1/16W
R322	1-218-845-11	s	CHIP, METAL 820 0.50% 1/16W
R323	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R324	1-218-710-11	s	CHIP, METAL 5.6K 0.50% 1/16W
R325	1-218-883-11	s	METAL 33K 0.50% 1/16W
R326	1-218-716-11	s	METAL 10K 0.50% 1/16W
R327	1-218-699-11	s	CHIP, METAL 2K 0.50% 1/16W
R328	1-218-714-11	s	METAL 8.2K 0.50% 1/16W
R329	1-218-699-11	s	CHIP, METAL 2K 0.50% 1/16W
R330	1-218-730-11	s	CHIP, METAL 39K 0.50% 1/16W
R331	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R332	1-218-692-11	s	CHIP, METAL 1K 0.50% 1/16W
R333	1-218-699-11	s	CHIP, METAL 2K 0.50% 1/16W
R334	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R335	1-218-672-11	s	METAL 150 0.50% 1/16W
R336	1-218-732-11	s	METAL 47K 0.50% 1/16W
R337	1-218-692-11	s	CHIP, METAL 1K 0.50% 1/16W
R338	1-218-699-11	s	CHIP, METAL 2K 0.50% 1/16W
R339	1-218-723-11	s	METAL 20K 0.50% 1/16W
R340	1-218-710-11	s	CHIP, METAL 5.6K 0.50% 1/16W
R341	1-218-699-11	s	CHIP, METAL 2K 0.50% 1/16W
R342	1-218-716-11	s	METAL 10K 0.50% 1/16W
R343	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R344	1-218-699-11	s	CHIP, METAL 2K 0.50% 1/16W
R345	1-218-842-11	s	CHIP, METAL 620 0.50% 1/16W
R346	1-218-750-11	s	METAL 270K 0.50% 1/16W
R347	1-218-723-11	s	METAL 20K 0.50% 1/16W
R348	1-216-825-11	s	METAL, CHIP 2.2K 5% 1/16W
R349	1-216-864-11	s	METAL, CHIP 0 5% 1/16W
R350	1-216-864-11	s	METAL, CHIP 0 5% 1/16W
R351	1-218-740-11	s	METAL 100K 0.50% 1/16W
R352	1-218-716-11	s	METAL 10K 0.50% 1/16W
R353	1-218-708-11	s	METAL 4.7K 0.50% 1/16W
R354	1-216-864-11	s	METAL, CHIP 0 5% 1/16W
R355	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R356	1-218-692-11	s	CHIP, METAL 1K 0.50% 1/16W
R357	1-218-858-11	s	CHIP, METAL 3K 0.50% 1/16W
R358	1-218-717-11	s	CHIP, METAL 11K 0.50% 1/16W
R359	1-218-723-11	s	METAL 20K 0.50% 1/16W
R360	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R361	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R362	1-218-727-11	s	METAL 30K 0.50% 1/16W
R363	1-218-692-11	s	CHIP, METAL 1K 0.50% 1/16W
R364	1-218-858-11	s	CHIP, METAL 3K 0.50% 1/16W
R365	1-218-723-11	s	METAL 20K 0.50% 1/16W
R366	1-218-716-11	s	METAL 10K 0.50% 1/16W
R367	1-218-698-11	s	METAL 1.8K 0.50% 1/16W
R368	1-218-704-11	s	METAL 3.3K 0.50% 1/16W
R369	1-218-692-11	s	CHIP, METAL 1K 0.50% 1/16W
R370	1-218-883-11	s	METAL 33K 0.50% 1/16W
R371	1-218-740-11	s	METAL 100K 0.50% 1/16W
R372	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R380	1-218-883-11	s	METAL 33K 0.50% 1/16W
R381	1-218-708-11	s	METAL 4.7K 0.50% 1/16W
R400	1-218-692-11	s	CHIP, METAL 1K 0.50% 1/16W
R401	1-218-723-11	s	METAL 20K 0.50% 1/16W
R402	1-216-829-11	s	METAL, CHIP 4.7K 5% 1/16W
R403	1-216-830-11	s	METAL, CHIP 5.6K 5% 1/16W
R404	1-218-727-11	s	METAL 30K 0.50% 1/16W
R405	1-218-732-11	s	METAL 47K 0.50% 1/16W
R406	1-218-708-11	s	METAL 4.7K 0.50% 1/16W
R407	1-218-856-11	s	CHIP, METAL 2.4K 0.50% 1/16W
R408	1-218-874-11	s	CHIP, METAL 13K 0.50% 1/16W
R409	1-218-714-11	s	METAL 8.2K 0.50% 1/16W
R410	1-211-969-11	s	CHIP, METAL 10 0.50% 1/16W
R411	1-218-710-11	s	CHIP, METAL 5.6K 0.50% 1/16W
R412	1-218-680-11	s	METAL 330 0.50% 1/16W
R413	1-218-851-11	s	CHIP, METAL 1.5K 0.50% 1/16W
R414	1-211-969-11	s	CHIP, METAL 10 0.50% 1/16W
R415	1-218-680-11	s	METAL 330 0.50% 1/16W
R416	1-218-692-11	s	CHIP, METAL 1K 0.50% 1/16W
R417	1-216-797-11	s	METAL, CHIP 10 5% 1/16W
R418	1-218-717-11	s	CHIP, METAL 11K 0.50% 1/16W
R419	1-218-699-11	s	CHIP, METAL 2K 0.50% 1/16W
R420	1-218-844-11	s	CHIP, METAL 750 0.50% 1/16W
R422	1-218-845-11	s	CHIP, METAL 820 0.50% 1/16W
R423	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R424	1-218-710-11	s	CHIP, METAL 5.6K 0.50% 1/16W
R425	1-218-883-11	s	METAL 33K 0.50% 1/16W
R426	1-218-716-11	s	METAL 10K 0.50% 1/16W
R427	1-218-699-11	s	CHIP, METAL 2K 0.50% 1/16W
R428	1-218-714-11	s	METAL 8.2K 0.50% 1/16W
R429	1-218-699-11	s	CHIP, METAL 2K 0.50% 1/16W
R430	1-218-730-11	s	CHIP, METAL 39K 0.50% 1/16W
R431	1-216-821-11	s	METAL, CHIP 1K 5% 1/16W
R432	1-218-692-11	s	CHIP, METAL 1K 0.50% 1/16W
R433	1-218-699-11	s	CHIP, METAL 2K 0.50% 1/16W
R434	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R435	1-218-672-11	s	METAL 150 0.50% 1/16W
R436	1-218-732-11	s	METAL 47K 0.50% 1/16W
R437	1-218-692-11	s	CHIP, METAL 1K 0.50% 1/16W
R438	1-218-699-11	s	CHIP, METAL 2K 0.50% 1/16W
R439	1-218-723-11	s	METAL 20K 0.50% 1/16W
R440	1-218-710-11	s	CHIP, METAL 5.6K 0.50% 1/16W
R441	1-218-699-11	s	CHIP, METAL 2K 0.50% 1/16W
R442	1-216-809-11	s	METAL, CHIP 100 5% 1/16W
R443	1-218-699-11	s	CHIP, METAL 2K 0.50% 1/16W
R444	1-218-842-11	s	CHIP, METAL 620 0.50% 1/16W
R445	1-218-735-11	s	METAL 62K 0.50% 1/16W
R446	1-218-723-11	s	METAL 20K 0.50% 1/16W
R447	1-216-864-11	s	METAL, CHIP 0 5% 1/16W
R448	1-218-716-11	s	METAL 10K 0.50% 1/16W
R449	1-216-825-11	s	METAL, CHIP 2.2K 5% 1/16W
R450	1-216-864-11	s	METAL, CHIP 0 5% 1/16W
R451	1-218-740-11	s	METAL 100K 0.50% 1/16W
R452	1-218-716-11	s	METAL 10K 0.50% 1/16W
R453	1-218-708-11	s	METAL 4.7K 0.50% 1/16W
R454	1-216-864-11	s	METAL, CHIP 0 5% 1/16W
R455	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R456	1-218-692-11	s	CHIP, METAL 1K 0.50% 1/16W
R457	1-218-858-11	s	CHIP, METAL 3K 0.50% 1/16W
R458	1-218-717-11	s	CHIP, METAL 11K 0.50% 1/16W

(VA-163 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R459	1-218-723-11	s	METAL 20K 0.50% 1/16W
R460	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R461	1-216-833-11	s	METAL, CHIP 10K 5% 1/16W
R462	1-218-727-11	s	METAL 30K 0.50% 1/16W
R463	1-218-692-11	s	CHIP, METAL 1K 0.50% 1/16W
R464	1-218-858-11	s	CHIP, METAL 3K 0.50% 1/16W
R465	1-218-723-11	s	METAL 20K 0.50% 1/16W
R466	1-218-716-11	s	METAL 10K 0.50% 1/16W
R467	1-218-698-11	s	METAL 1.8K 0.50% 1/16W
R468	1-218-704-11	s	METAL 3.3K 0.50% 1/16W
R469	1-218-692-11	s	CHIP, METAL 1K 0.50% 1/16W
R470	1-218-883-11	s	METAL 33K 0.50% 1/16W
R471	1-218-740-11	s	METAL 100K 0.50% 1/16W
R472	1-216-845-11	s	METAL, CHIP 100K 5% 1/16W
R480	1-218-883-11	s	METAL 33K 0.50% 1/16W
R481	1-218-708-11	s	METAL 4.7K 0.50% 1/16W
RV50	1-241-263-11	s	RES, ADJ, METALT 5K
RV200	1-241-260-11	s	METAL, ADJ 500
RV300	1-241-260-11	s	METAL, ADJ 500
RV400	1-241-260-11	s	METAL, ADJ 500

FRAME

Ref. No. or Q'ty	Part No.	SP	Description
	⚠ A-8272-571-A	s	CONVERTER ASSY, DC-DC
	1-775-774-11	o	FLEXIBLE CARD WIRE (20 CORE) (CN-1121 TO MB-602)
	1-775-775-11	o	FLEXIBLE CARD WIRE (24 CORE) (CN-1122 TO MB-602)
	1-775-776-11	o	FLEXIBLE CARD WIRE (30 CORE) (CN1120 TO MB-602)
	1-775-777-11	o	FLEXIBLE CARD WIRE (30 CORE) (CN1121 TO MB-602)
	1-775-778-11	o	FLEXIBLE CARD WIRE (30 CORE) (CN1120 TO MB-602)
	1-782-697-11	s	FLEXIBLE CARD WIRE (20 CORE) (MB-602 TO CN-1504)
	1-782-698-11	s	FLEXIBLE CARD WIRE (24 CORE) (MB-602 TO CN-1504)
	1-955-080-12	o	HARNESS (VF)
	1-955-086-12	o	HARNESS (PA)
CN901	1-561-781-91	s	CONNECTOR BNC "TEST OUT"
CN902	1-562-222-41	s	CONNECTOR 6P FEMALE "REMOTE"
CN903	1-565-051-21	o	CONNECTOR, 20P FEMAL "VF"
CN904	1-695-841-12	s	CONNECTOR 12P FEMALE "LENS"
CN905	1-509-184-51	s	CONNECTOR 3P MALE "MIC"

(FRAME)

Ref. No. or Q'ty	Part No.	SP	Description
CN2F(to PA-181 BOARD of CCD UNIT)			
	1-695-212-11	o	HOUSING, 6P
	1-695-215-11	o	CONTACT, FEMALE AWG26-30
CN15F(to MB602 BOARD)			
	1-764-193-11	o	HOUSING, 3P
	1-695-215-11	o	CONTACT, FEMALE AWG26-30
CN21F(to MB-602 BOARD)			
	1-764-196-11	o	HOUSING, 8P
	1-695-215-11	o	CONTACT, FEMALE AWG26-30
CN31F(to MB-602 BOARD)			
	1-580-586-11	o	HOUSING, 20P
	1-573-176-11	o	CONTACT, FEMALE AWG22-26
	1-580-599-11	o	CONTACT, FEMALE AWG26-30
CN32F(to MB-602 BOARD)			
	1-695-892-11	o	HOUSING, 12P
	1-695-215-11	o	CONTACT, FEMALE AWG26-30
CN42F(to MB-602 BOARD)			
	1-764-195-11	o	HOUSING, 5P
	1-695-215-11	o	CONTACT, FEMALE AWG26-30
CN301F(to SW-732 BOARD)			
	1-764-195-11	o	HOUSING, 5P
	1-695-215-11	o	CONTACT, FEMALE AWG26-30
CN402F(to CN1122 BOARD)			
	1-695-892-11	o	HOUSING, 12P
	1-695-215-11	o	CONTACT, FEMALE AWG26-30
CN405F(to CN1122 BOARD)			
	1-764-198-11	o	HOUSING, 11P
	1-695-215-11	o	CONTACT, FEMALE AWG26-30
CN406F(to CN1122 BOARD)			
	1-764-193-11	o	HOUSING, 3P
	1-695-215-11	o	CONTACT, FEMALE AWG26-30
CN407F(to MB602 BOARD)			
	1-695-212-11	o	HOUSING, 6P
	1-695-215-11	o	CONTACT, FEMALE AWG26-30
CN501F(to SW731 BOARD)			
	1-695-212-11	o	HOUSING, 6P
	1-695-215-11	o	CONTACT, FEMALE AWG26-30
CN601F(to SW742 BOARD)			
	1-764-193-11	o	HOUSING, 3P
	1-695-215-11	o	CONTACT, FEMALE AWG26-30
CN701F(to SW733 BOARD)			
	1-764-194-11	o	HOUSING, 4P
	1-695-215-11	o	CONTACT, FEMALE AWG26-30
CN801F(to SW730 BOARD)			
	1-764-198-11	o	HOUSING, 11P
	1-695-215-11	o	CONTACT, FEMALE AWG26-30

5-4. Optional Fixtures

TOOLS AND FIXTURES

Part No.	SP	Description
J-6026-110-A	o	MULTI-BURST CHART
J-6026-130-B	o	GRAYSCALE CHART
J-6029-140-B	o	PATTERN BOX PTB-500
J-6394-080-A	o	GRAYSCALE CHART (16:9)
J-6395-040-A	o	EXTENSION BOARD, EX-464

5-5. Changed Parts

NOTE: The numbers identified by marking with) are
matching with each serial numbers.
See the table matched with each serial numbers.

510) Serial No. 50141 and higher
15001 and higher
603) Serial No. 15241 and higher
607) Serial No. 15441 and higher
705) Serial No. 16371 and higher

AT-95 BOARD

510) R44	1-218-567-11 s METAL, CHIP 6.8K 0.5% 1/16W	--->	1-218-707-11 s METAL, CHIP 4.3K 0.5% 1/16W
603) R51	1-216-821-11 s METAL, CHIP 1K 5% 1/16W	--->	1-216-864-11 s METAL, CHIP 0 5% 1/16W
603) R166	NOT IN USE.	--->	1-216-821-11 s METAL, CHIP 1K 5% 1/16W
603) IC11	8-759-711-50 s IC NJU7022M	--->	8-759-906-53 s IC TL062CPS

CN-1504 BOARD

705) 1pc	NOT IN USE.	--->	A-8315-489-A s MOUNTED CIRCUIT BOARD, CN-1504

FRAME

705) 1pc	1-777-000-11 s FLEXIBLE CARD WIRE (20 CORE)	--->	DELETE
705) 1pc	1-777-001-11 s FLEXIBLE CARD WIRE (24 CORE)	--->	DELETE
705) 1pc	NOT IN USE.	--->	1-782-697-11 s FLEXIBLE CARD WIRE (20 CORE)
705) 1pc	NOT IN USE.	--->	1-782-698-11 s FLEXIBLE CARD WIRE (24 CORE)

IF-510 BOARD

607) C252	1-163-231-11 s CERAMIC, CHIP 15PF 5% 50V	--->	1-162-917-11 s CERAMIC 15PF 5% 50V
607) C330	1-102-111-00 s CERAMIC 270PF 10% 50V	--->	1-162-958-11 s CERAMIC 270PF 5% 50V
510) R106	NOT IN USE.	--->	1-216-624-11 s METAL, CHIP 75 0.5% 1/10W
607) R106	1-216-624-11 s METAL, CHIP 75 0.5% 1/10W	--->	1-211-990-11 s METAL, CHIP 75 0.5% 1/16W
510) R107	NOT IN USE.	--->	1-216-664-11 s METAL, CHIP 3.6K 0.5% 1/10W
607) R107	1-216-664-11 s METAL, CHIP 3.6K 0.5% 1/10W	--->	1-218-705-11 s METAL, CHIP 4.3K 0.5% 1/16W
510) R622	1-218-699-11 s METAL, CHIP 2K 0.5% 1/16W	--->	1-218-698-11 s METAL, CHIP 1.8K 0.5% 1/16W
510) R623	1-218-648-11 s METAL, CHIP 15 0.5% 1/16W	--->	1-218-671-11 s METAL, CHIP 130 0.5% 1/16W

VA-163 BOARD

705) R445	1-218-740-11 s METAL 100K 0.50% 1/16W	--->	1-218-735-11 s METAL 62K 0.50% 1/16W

Section 6
Semiconductor Pin Assignments

ここに記載されている半導体は，それぞれの機能を等価的に表したものです。　なお，互換性のない型名を併記していることがありますので，部品を交換するときは，Spare Partsの章を参照してください。

等価回路はＩＣメーカーのデータブックに従いました。

Semiconductors of which functions are equivalent are described here. For parts replacement, refer to the section of Spare Parts in this manual. The circuit diagram of each IC is obtained from the IC data book published by the manufacturer.

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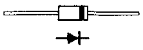
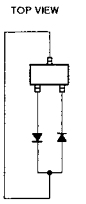
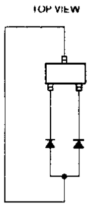
DIODE



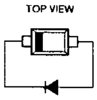
1S1588



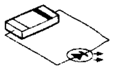
1SS226
1SS302
HSM107S
HSM88AS



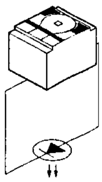
1SS300
HSM88WA



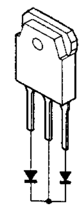
1T363



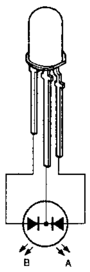
CL-150D-CD;ORANGE
CL-150PG-CD;GREEN
CL-150UR-CD;RED



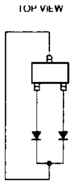
CL-200HR;RED



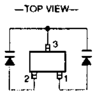
DE5LC20U



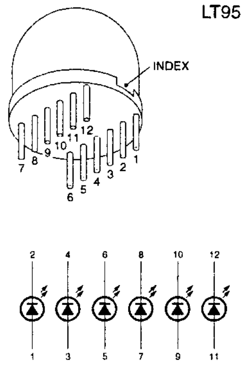
GL-5ED5;A=RED,B=YEL GRN



HSM88WK
MA141WK


TOP VIEW
3
2
1

KV1470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12
11
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9
8
7
6
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3
2
1
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4
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8
10
12
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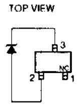
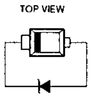
3
5
7
9
11

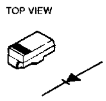
LT9527U


TOP VIEW
3
NC
2
1

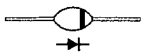
RD ? ?M-B
RD ? ?MB
RD ? ?M-B ?



RD ? ?UH
RD ? ?UJN

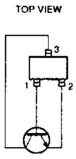


SC802-04

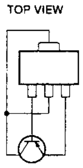


V09C
V09G
V11 ?

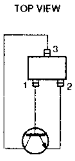
TRANSISTOR


TOP VIEW
3
1
2

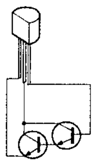
2SA1162G
2SA1226
2SA1610
2SA1611
2SA1688
2SA1808
2SA811A
2SB1440S
2SB624



2SB1115A
2SB1121
2SB798

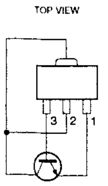

TOP VIEW
3
1
2

2SC1623
2SC2223
2SC2712
2SC2713
2SC2714Y
2SC2757
2SC2758
2SC3115
2SC3360
2SC4177
2SC4177-L6
2SC4178
2SC4184
2SC4215
2SD1048
2SD596
2SD596-DV5

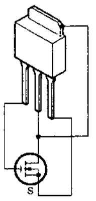


2SD1111

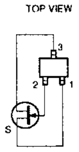
Others


TOP VIEW
3
2
1

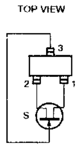
2SD1615A
2SD1623



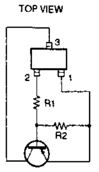
2SK612


TOP VIEW
3
2
1
S

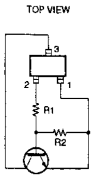
2SK663


TOP VIEW
3
2
1
S

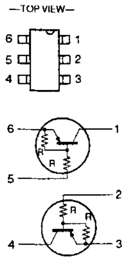
2SK852-X2
2SK853


TOP VIEW
3
2
1
R1
R2

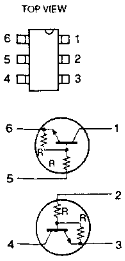
DTA143XKA(R1=4.7K R2=10K)
DTA144EE(R1=47K, R2=47K)
DTA144EUA(R1=47K, R2=47K)


TOP VIEW
3
2
1
R1
R2

DTC143XKA(R1=4.7K, R2=10K)
DTC144EE(R1=47K, R2=47K)
DTC144EK(R1=47K, R2=47K)
DTC144EKA(R1=47K, R2=47K)
DTC144EUA(R1=47K, R2=47K)


—TOP VIEW—
6
5
4
1
2
3
R
R
R
R

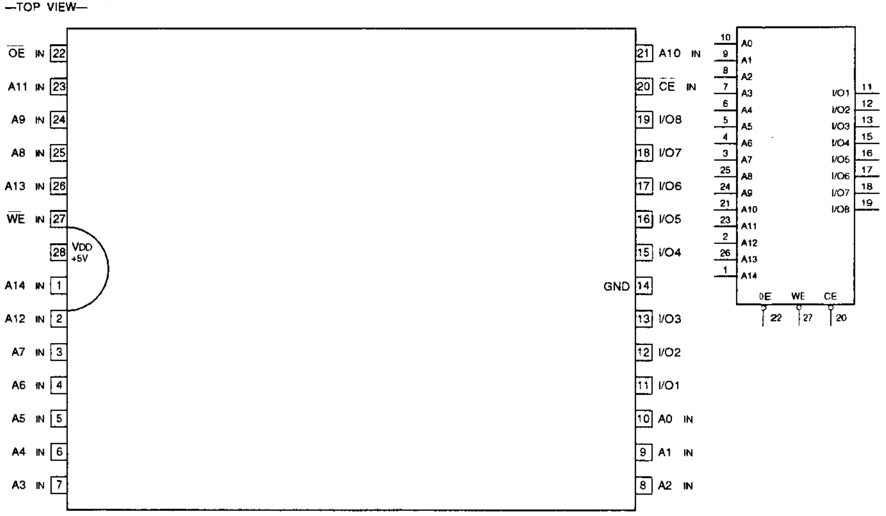
IMB2(R=47K)


TOP VIEW
6
5
4
1
2
3
R
R
R
R

IMH2(R=47K)

CXK58257ATM-70LL(SONY)(ACCESS TIME=70ns)FLAT PACKAGE

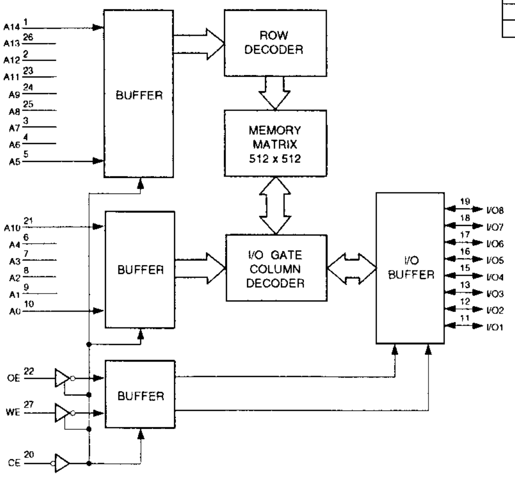
C-MOS 256K (32768 x 8)-BIT STATIC RAM


—TOP VIEW—
OE IN 22
A11 IN 23
A9 IN 24
A8 IN 25
A13 IN 26
WE IN 27
28 VDD +5V
A14 IN 1
A12 IN 2
A7 IN 3
A6 IN 4
A5 IN 5
A4 IN 6
A3 IN 7
21 A10 IN
20 CE IN
19 I/O8
18 I/O7
17 I/O6
16 I/O5
15 I/O4
GND 14
13 I/O3
12 I/O2
11 I/O1
10 A0 IN
9 A1 IN
8 A2 IN
10 A0
9 A1
8 A2
7 A3
6 A4
5 A5
4 A6
3 A7
25 A8
24 A9
21 A10
23 A11
2 A12
26 A13
1 A14
I/O1 11
I/O2 12
I/O3 13
I/O4 15
I/O5 16
I/O6 17
I/O7 18
I/O8 19
OE 22
WE 27
CE 20

A0-A14 ; ADDRESS INPUTS
CE ; CHIP ENABLE INPUT
I/O1-I/O8 ; DATA INPUTS/OUTPUTS
OE ; OUTPUT ENABLE INPUT
WE ; WRITE ENABLE INPUT

CE	OE	WE	MODE	I/O TERMINAL
1	X	X	NOT SELECT	HIGH IMPEDANCE
0	1	1	OUTPUT DISABLE	HIGH IMPEDANCE
0	0	1	READ	OUTPUT DATA
0	X	0	WRITE	INPUT DATA

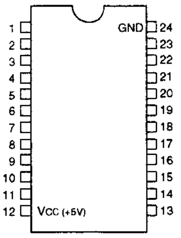
0 : LOW LEVEL
1 : HIGH LEVEL
X : DON'T CARE


A14 1
A13 26
A12 2
A11 23
A9 24
A8 25
A7 3
A6 4
A5 5
BUFFER
ROW DECODER
MEMORY MATRIX 512 x 512
A10 21
A4 6
A3 7
A2 8
A1 9
A0 10
BUFFER
I/O GATE COLUMN DECODER
I/O BUFFER
19 I/O8
18 I/O7
17 I/O6
16 I/O5
15 I/O4
13 I/O3
12 I/O2
11 I/O1
OE 22
WE 27
CE 20
BUFFER

Others

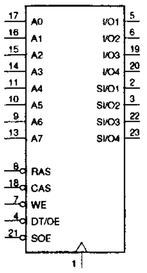
HM53461JP-12(HITACHI)(ACCESS TIME=120ns)PLCC

C-MOS 64K WORD x 4 BIT MULTI PORT RAM
—TOP VIEW—



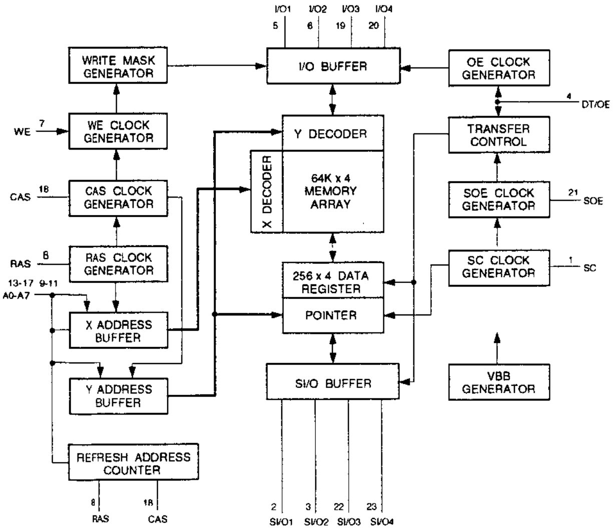
GND
Vcc (+5V)
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24

PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL
1	—	SC	13	I	A7
2	I/O	SI/O1	14	I	A3
3	I/O	SI/O2	15	I	A2
4	—	$\overline{\text{DT/OE}}$	16	I	A1
5	I/O	I/O1	17	I	A0
6	I/O	I/O2	18	—	$\overline{\text{CAS}}$
7	—	$\overline{\text{WE}}$	19	I/O	I/O3
8	—	$\overline{\text{RAS}}$	20	I/O	I/O4
9	I	A6	21	—	$\overline{\text{SOE}}$
10	I	A5	22	I/O	SI/O3
11	I	A4	23	I/O	SI/O4
12	—	Vcc	24	—	GND



17 A0
16 A1
15 A2
14 A3
11 A4
10 A5
9 A6
13 A7
I/O1 5
I/O2 6
I/O3 19
I/O4 20
SI/O1 2
SI/O2 3
SI/O3 22
SI/O4 23
8 RAS
18 CAS
7 WE
4 DT/OE
21 SOE
1

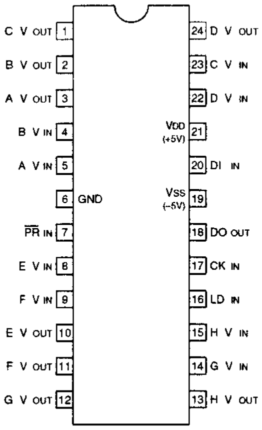
A0-A7 ; ADDRESS INPUT
CAS ; COLUMN ADDRESS STROBE INPUT
DT/OE ; DATA TRANSMISSION/OUTPUT ENABLE INPUT
I/O1-I/O4 ; RAM PORT DATA INPUT/OUTPUT
RAS ; ROW ADDRESS STROBE INPUT
SC ; SERIAL CLOCK INPUT
SI/O1-SI/O4 ; SAM PORT DATA INPUT/OUTPUT
SOE ; SAM PORT ENABLE INPUT/OUTPUT
WE ; WRITE ENABLE INPUT



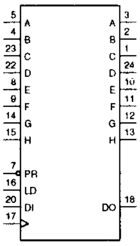
I/O1 I/O2 I/O3 I/O4
5 6 19 20
WRITE MASK GENERATOR
I/O BUFFER
OE CLOCK GENERATOR
4 DT/OE
WE 7
WE CLOCK GENERATOR
Y DECODER
TRANSFER CONTROL
CAS 18
CAS CLOCK GENERATOR
X DECODER
64K x 4 MEMORY ARRAY
SOE CLOCK GENERATOR
21 SOE
RAS 8
RAS CLOCK GENERATOR
256 x 4 DATA REGISTER
SC CLOCK GENERATOR
1 SC
13-17 9-11
A0-A7
X ADDRESS BUFFER
POINTER
Y ADDRESS BUFFER
SI/O BUFFER
VBB GENERATOR
REFRESH ADDRESS COUNTER
8 18
RAS CAS
2 3 22 23
SI/O1 SI/O2 SI/O3 SI/O4

MP7670AS(MICRO POWER SYSTEMS)FLAT PACKAGE

C-MOS 8-BIT 8CHANNEL D/A CONVERTER
— TOP VIEW —

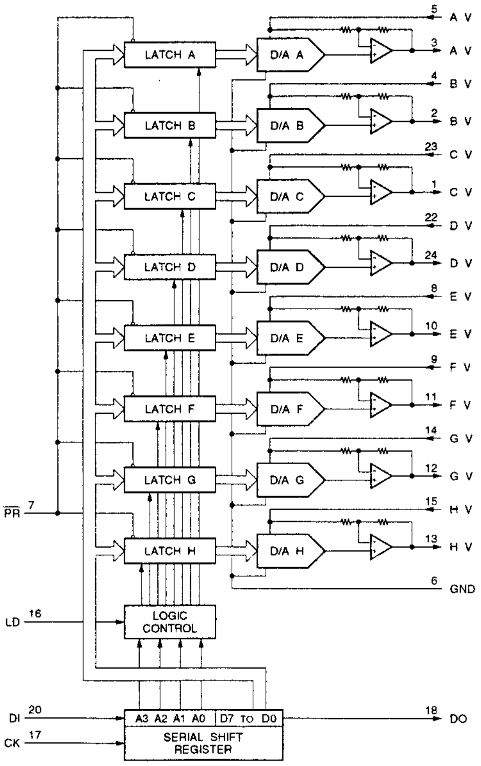


C V OUT 1
B V OUT 2
A V OUT 3
B V IN 4
A V IN 5
6 GND
PR IN 7
E V IN 8
F V IN 9
E V OUT 10
F V OUT 11
G V OUT 12
24 D V OUT
23 C V IN
22 D V IN
VDD (+5V) 21
20 DI IN
VSS (-5V) 19
18 DO OUT
17 CK IN
16 LD IN
15 H V IN
14 G V IN
13 H V OUT



5 A
4 B
23 C
22 D
8 E
9 F
14 G
15 H
A 3
B 2
C 1
D 24
E 10
F 11
G 12
H 13
7 PR
16 LD
20 DI
17
DO 18

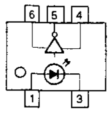
CK ; CLOCK INPUT
DI ; SERIAL DATA INPUT
DO ; DATA OUTPUT
LD ; DATA LOAD CONTROL INPUT
PR ; PRESET INPUT

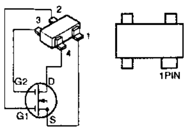


LATCH A
D/A A
5 A V
3 A V
LATCH B
D/A B
4 B V
2 B V
LATCH C
D/A C
23 C V
1 C V
LATCH D
D/A D
22 D V
24 D V
LATCH E
D/A E
8 E V
10 E V
LATCH F
D/A F
9 F V
11 F V
LATCH G
D/A G
14 G V
12 G V
LATCH H
D/A H
15 H V
13 H V
6 GND
PR 7
LD 16
LOGIC CONTROL
DI 20
CK 17
A3 A2 A1 A0 D7 TO D0
SERIAL SHIFT REGISTER
18 DO

PC410(SHARP)FLAT PACKAGE

OPIC-OUTPUT PHOTO COUPLER
—TOP VIEW—

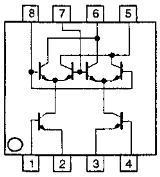


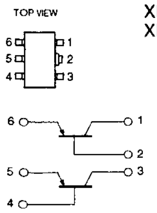

2
3
1
4
G2
D
G1
S
1PIN

SGM2016M

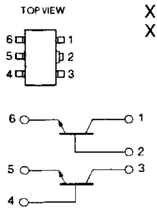
UPA101G(NEC)FLAT PACKAGE

TRANSISTOR ARRAY
—TOP VIEW—

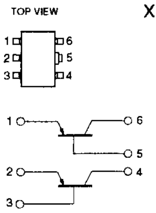



TOP VIEW
6
5
4
1
2
3
6
1
2
5
3
4

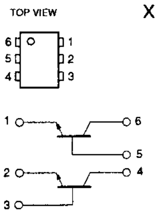
XN6401
XN6435


TOP VIEW
6
5
4
1
2
3
6
1
2
5
3
4

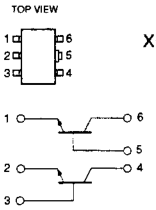
XN6501
XN6534


TOP VIEW
1
2
3
6
5
4
1
6
5
2
4
3

XP6435


TOP VIEW
6
5
4
1
2
3
1
6
5
2
4
3

XP6501

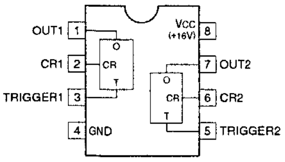

TOP VIEW
1
2
3
6
5
4
1
6
5
2
4
3

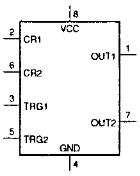
XP6534

IC

BA225F(ROHM)

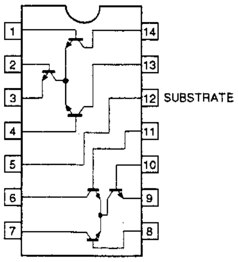
CR TIMER
-TOP VIEW-


OUT1 1
CR1 2
TRIGGER1 3
4 GND
VCC (+16V) 8
7 OUT2
6 CR2
5 TRIGGER2
O
CR
T


8 VCC
2 CR1
6 CR2
3 TRG1
5 TRG2
OUT1 1
OUT2 7
GND 4

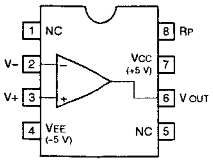
CA3102M(RCA)FLAT PACKAGE

HIGH FREQ.DIFFERENTIAL AMPLIFIER
—TOP VIEW—


1
2
3
4
5
6
7
14
13
12 SUBSTRATE
11
10
9
8

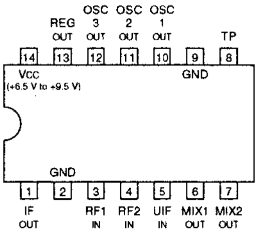
CLC505AJE(COMLINEAR)FLAT PACKAGE

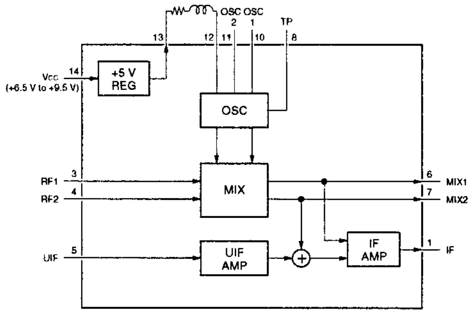
OPERATIONAL AMPLIFIER
— TOP VIEW —


1 NC
V- 2
V+ 3
4 VEE (-5 V)
8 RP
VCC (+5 V) 7
6 V OUT
NC 5
-
+

CXA1165M(SONY)FLAT PACKAGE

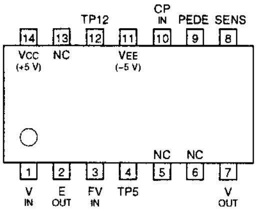
CATV VHF TUNER
— TOP VIEW —

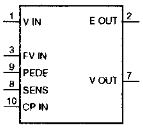

REG OUT
OSC 3 OUT
OSC 2 OUT
OSC 1 OUT
TP
14 13 12 11 10 9 8
VCC (+6.5 V to +9.5 V)
GND
GND
1 2 3 4 5 6 7
IF OUT
RF1 IN
RF2 IN
UIF IN
MIX1 OUT
MIX2 OUT


OSC OSC 2 1
TP
13 12 11 10 8
VCC (+6.5 V to +9.5 V) 14
+5 V REG
OSC
RF1 3
RF2 4
MIX
6 MIX1
7 MIX2
UIF 5
UIF AMP
IF AMP
1 IF

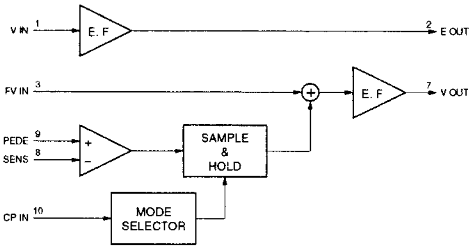
CXA1432M(SONY)FLAT PACKAGE

VIDEO SIGNAL CLAMPER
— TOP VIEW —


TP12
CP IN
PEDE
SENS
14 13 12 11 10 9 8
VCC (+5 V)
NC
VEE (-5 V)
NC NC
1 2 3 4 5 6 7
V IN
E OUT
FV IN
TP5
V OUT


1 V IN
3 FV IN
9 PEDE
8 SENS
10 CP IN
E OUT 2
V OUT 7

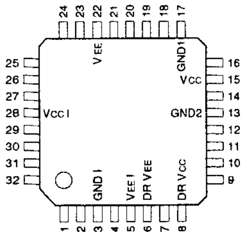
CP IN : CLAMP PULSE INPUT
E OUT : BUFFER AMP OUTPUT
FV IN : FLOATING VIDEO SIGNAL INPUT
PEDE : CLAMP LEVEL DC INPUT
SENS : CLAMP POINT SIGNAL INPUT
TP5, TP12 : FOR TEST
V IN : VIDEO SIGNAL INPUT
V OUT : VIDEO SIGNAL OUTPUT


V IN 1
E. F
2 E OUT
FV IN 3
E. F
7 V OUT
PEDE 9
SENS 8
+
-
SAMPLE & HOLD
CP IN 10
MODE SELECTOR

CXA1486Q (SONY)

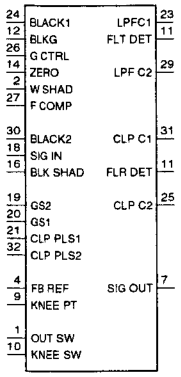
VIDEO AMPLIFIER FOR VIDEO CAMERA

- TOP VIEW -


24
23
22
21
20
19
18
17
VEE
GND1
25
26
27
28
29
30
31
32
VCC I
VCC
GND2
16
15
14
13
12
11
10
9
GND I
VEE I
DR VEE
DR VCC
1
2
3
4
5
6
7
8

Vcc, Vccl, DR Vcc, = (+5V)
VEE, VEEI, DR VEE. = (-2.5 to -5.5V)

PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL
1	I	OUT SW	17	–	GND1
2	I	W SHAD	18	I	SIG IN
3	–	GND I	19	I	GS2
4	I	FB REF	20	I	GS1
5	–	VEE I	21	I	CLP PLS1
6	–	DR VEE	22	–	VEE
7	O	SIG OUT	23	O	LPF C1
8	–	DR Vcc	24	I	BLACK1
9	I	KNEE PT	25	O	CLP C2
10	I	KNEE SW	26	I	G CTRL
11	O	FLR DET	27	I	F COMP
12	I	BLKG	28	–	Vcc I
13	–	GND2	29	O	LPF C2
14	I	ZERO	30	I	BLACK2
15	–	Vcc	31	O	CLP C1
16	I	BLK SHAD	32	I	CLP PLS2

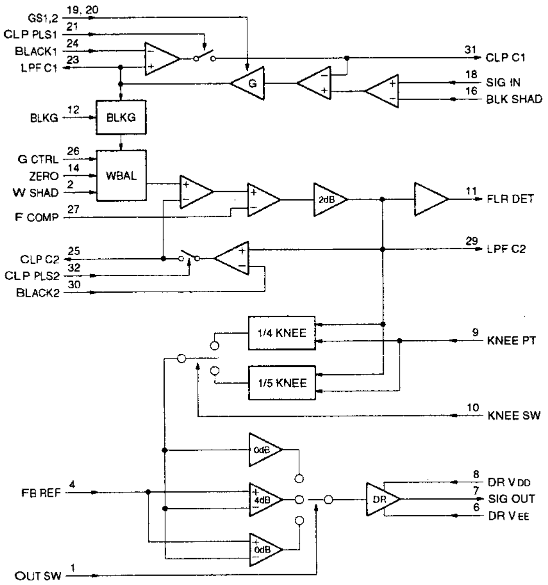

24 BLACK1
12 BLKG
26 G CTRL
14 ZERO
2 W SHAD
27 F COMP
30 BLACK2
18 SIG IN
16 BLK SHAD
19 GS2
20 GS1
21 CLP PLS1
32 CLP PLS2
4 FB REF
9 KNEE PT
1 OUT SW
10 KNEE SW
LPFC1 23
FLT DET 11
LPF C2 29
CLP C1 31
FLR DET 11
CLP C2 25
SIG OUT 7

INPUT

BLACK1, 2	; FOR CLAMP DC COMPENSATION
BLKG	; BLANKING SIGNAL
BLK SHAD	; BLACK SHADING CORRECTION SIGNAL
CLP PLS1, 2	; CLAMP PULSE
F COMP	; FLARE COMPENSATION SIGNAL
FB REF	; OUTPUT 2 INVERT AMPLIFY DC ADJUST
G CTRL	; WHITE BALANCE GAIN CONTROL
GS1, 2	; GAIN SELECT
KNEE PT	; KNEE POINT
KNEE SW	; 1/4, 1/5 KNEE SELECT (4.5V=1/4 KNEE, 0V=1/5 KNEE)
OUT SW	; OUTPUT 3 AMPLIFY SELECT
SIG IN	; SIGNAL INPUT
W SHAD	; WHITE SHADING SIGNAL
ZERO	; VARIABLE GAIN AMPLIFY ZERO POINT ADJUST

OUTPUT

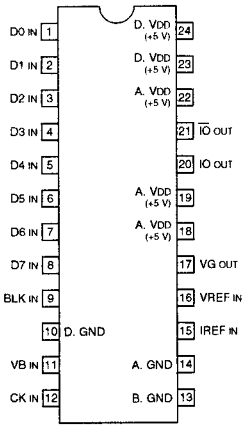
CLP C1, C2	; FOR CLAMP CAPACITANCE
FLR DET	; FLARE DETECT
LPF C1, C2	; CONNECT CAPACITANCE FOR LPF
SIG OUT	; SIGNAL OUTPUT

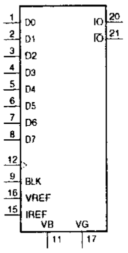

GS1,2 19, 20
CLP PLS1 21
BLACK1 24
LPF C1 23
31 CLP C1
G
18 SIG IN
16 BLK SHAD
BLKG 12
BLKG
G CTRL 26
ZERO 14
W SHAD 2
F COMP 27
WBAL
2dB
11 FLR DET
CLP C2 25
CLP PLS2 32
BLACK2 30
29 LPF C2
1/4 KNEE
9 KNEE PT
1/5 KNEE
10 KNEE SW
0dB
FB REF 4
4dB
DR
8 DR VDD
7 SIG OUT
6 DR VEE
0dB
OUT SW 1

CXD1171M(SONY)FLAT PACKAGE

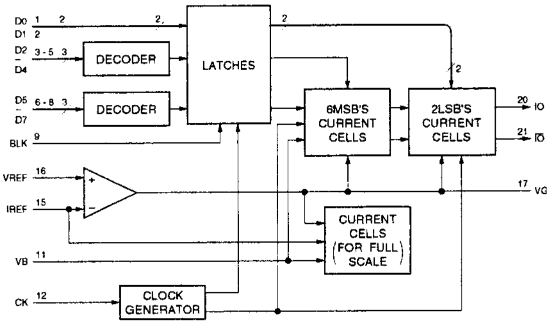
C-MOS 8-BIT D/A CONVERTER

— TOP VIEW —


D0 IN 1
D1 IN 2
D2 IN 3
D3 IN 4
D4 IN 5
D5 IN 6
D6 IN 7
D7 IN 8
BLK IN 9
10 D. GND
VB IN 11
CK IN 12
D. VDD (+5 V) 24
D. VDD (+5 V) 23
A. VDD (+5 V) 22
21 IO OUT
20 IO OUT
A. VDD (+5 V) 19
A. VDD (+5 V) 18
17 VG OUT
16 VREF IN
15 IREF IN
A. GND 14
B. GND 13


1 D0
2 D1
3 D2
4 D3
5 D4
6 D5
7 D6
8 D7
12
9 BLK
16 VREF
15 IREF
IO 20
IO 21
VB 11
VG 17

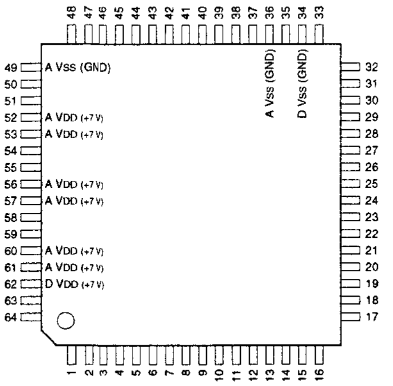
CK	; CLOCK INPUT
BLK	; BLANKING PULSE INPUT
D0 - 7	; DIGITAL DATA INPUT
IO	; CURRENT OUTPUT
$\overline{\text{IO}}$	; INVERT CURRENT OUTPUT
IREF	; CURRENT REFERENCE INPUT
VB, VG	; FOR CAPACITOR
VREF	; VOLTAGE REFERENCE INPUT


D0 1 2
D1 2
D2 3-5 3
D4
D5 6-8 3
D7
DECODER
DECODER
LATCHES
BLK 9
6MSB'S CURRENT CELLS
2LSB'S CURRENT CELLS
20 IO
21 IO
VREF 16
IREF 15
17 VG
CURRENT CELLS (FOR FULL SCALE)
VB 11
CK 12
CLOCK GENERATOR

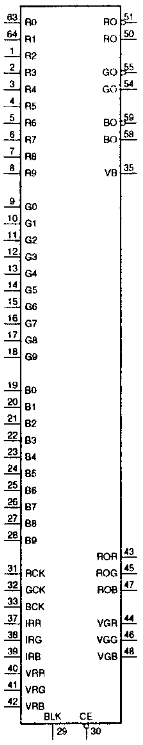
IC

CXD2307R(SONY)FLAT PACKAGE

C-MOS 10-BIT 50MSPS RGB 3CHANNEL D/A CONVERTER
—TOP VIEW—

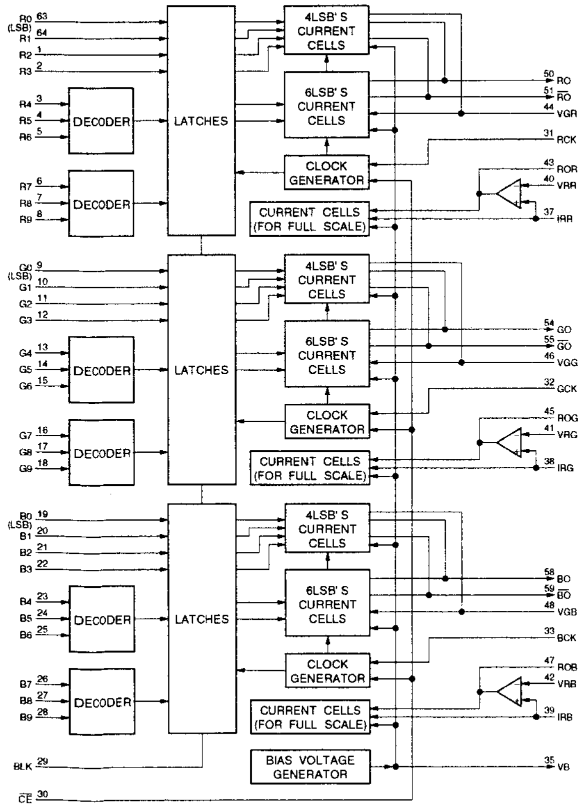


48 47 46 45 44 43 42 41 40 39 38 37 36 35 34 33
49 A Vss (GND)
50
51
52 A VDD (+7 V)
53 A VDD (+7 V)
54
55
56 A VDD (+7 V)
57 A VDD (+7 V)
58
59
60 A VDD (+7 V)
61 A VDD (+7 V)
62 D VDD (+7 V)
63
64
A Vss (GND)
D Vss (GND)
32 31 30 29 28 27 26 25 24 23 22 21 20 19 18 17
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16



63 R0
64 R1
1 R2
2 R3
3 R4
4 R5
5 R6
6 R7
7 R8
8 R9
9 G0
10 G1
11 G2
12 G3
13 G4
14 G5
15 G6
16 G7
17 G8
18 G9
19 B0
20 B1
21 B2
22 B3
23 B4
24 B5
25 B6
26 B7
27 B8
28 B9
31 RCK
32 GCK
33 BCK
37 IRR
38 IRG
39 IRB
40 VRR
41 VRG
42 VRB
RO 51
RO 50
GO 55
GO 54
BO 59
BO 58
VB 35
ROR 43
ROG 45
ROB 47
VGR 44
VGG 46
VGB 48
BLK 29
CE 30

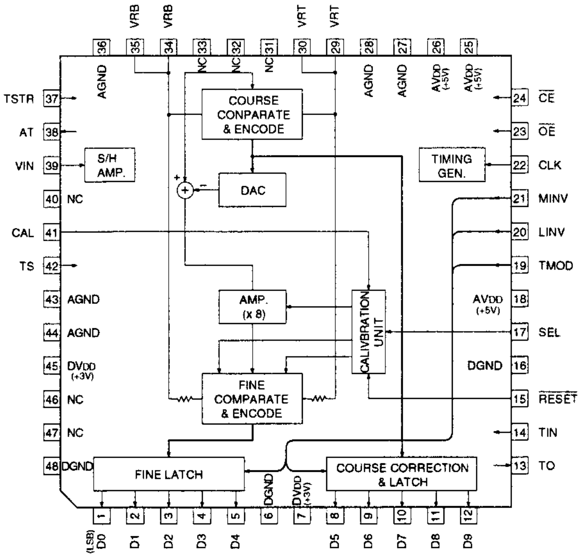
PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL
1	I	R2	17	I	G8	33	I	BCK	49	—	AVss
2	I	R3	18	I	G9	34	—	DVss	50	O	RO
3	I	R4	19	I	B0 (LSB)	35	O	VB	51	O	$\overline{\text{RO}}$
4	I	R5	20	I	B1	36	—	AVss	52	—	AVDD
5	I	R6	21	I	B2	37	I	IRR	53	—	AVDD
6	I	R7	22	I	B3	38	I	IRG	54	O	GO
7	I	R8	23	I	B4	39	I	IRB	55	O	$\overline{\text{GO}}$
8	I	R9	24	I	B5	40	I	VRR	56	—	AVDD
9	I	G0 (LSB)	25	I	B6	41	I	VRG	57	—	AVDD
10	I	G1	26	I	B7	42	I	VRB	58	O	BO
11	I	G2	27	I	B8	43	I	ROR	59	O	$\overline{\text{BO}}$
12	I	G3	28	I	B9	44	I	VGR	60	—	AVDD
13	I	G4	29	I	BLK	45	I	ROG	61	—	AVDD
14	I	G5	30	I	$\overline{\text{CE}}$	46	I	VGG	62	—	DVDD
15	I	G6	31	I	RCK	47	I	ROB	63	I	R0 (LSB)
16	I	G7	32	I	GCK	48	I	VGB	64	I	R1



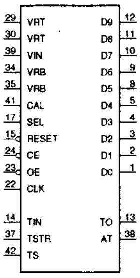
R0 63 (LSB)
R1 64
R2 1
R3 2
R4 3
R5 4
R6 5
R7 6
R8 7
R9 8
G0 9 (LSB)
G1 10
G2 11
G3 12
G4 13
G5 14
G6 15
G7 16
G8 17
G9 18
B0 19 (LSB)
B1 20
B2 21
B3 22
B4 23
B5 24
B6 25
B7 26
B8 27
B9 28
BLK 29
CE 30
DECODER
LATCHES
4LSB' S CURRENT CELLS
6LSB' S CURRENT CELLS
CLOCK GENERATOR
CURRENT CELLS (FOR FULL SCALE)
BIAS VOLTAGE GENERATOR
50 RO
51 RO
44 VGR
31 RCK
43 ROR
40 VRR
37 IRR
54 GO
55 GO
46 VGG
32 GCK
45 ROG
41 VRG
38 IRG
58 BO
59 BO
48 VGB
33 BCK
47 ROB
42 VRB
39 IRB
35 VB

CXD2310R(SONY)

C-MOS 10-BIT 20MSPS VIDEO A/D CONVERTER
—TOP VIEW—



VRB
VRB
VRT
VRT
36 35 34 33 32 31 30 29 28 27 26 25
AGND
NC
NC
NC
AGND
AGND
AVDD (+5V)
AVDD (+5V)
TSTR 37
AT 38
VIN 39
40 NC
CAL 41
TS 42
43 AGND
44 AGND
45 DVDD (+3V)
46 NC
47 NC
48 DGND
S/H AMP.
COURSE CONPARATE & ENCODE
DAC
AMP. (x 8)
CALIVBRATION UNIT
FINE COMPARATE & ENCODE
FINE LATCH
COURSE CORRECTION & LATCH
TIMING GEN.
24 CE
23 OE
22 CLK
21 MINV
20 LINV
19 TMOD
AVDD (+5V) 18
17 SEL
DGND 16
15 RESET
14 TIN
13 TO
1 2 3 4 5 6 7 8 9 10 11 12
DGND
DVDD (+3V)
(LSB) D0
D1
D2
D3
D4
D5
D6
D7
D8
D9



29 VRT
30 VRT
39 VIN
34 VRB
35 VRB
41 CAL
17 SEL
15 RESET
24 CE
23 OE
22 CLK
14 TIN
37 TSTR
42 TS
D9 12
D8 11
D7 10
D6 9
D5 8
D4 5
D3 4
D2 3
D1 2
D0 1
TO 13
AT 38

INPUT

CAL	; CALIBRATION PULSE INPUT
CE	; CHIP ENABLE
CLK	; CLOCK
LINV	; OUTPUT (D0-D8) INVERSION
MINV	; OUTPUT (D9) INVERSION
OE	; DIGITAL DATA OUTPUT ENABLE
RESET	; CALIBRATION CIRCUIT RESET
SEL	; OUTPUT DATA (D5-D9) SELECT FOR CALIBRATION (4-CLOCK) HIGH; THROUGH OUTPUT. LOW; DATA FIXED AS WITH D0-D4
TIN	; TEST SIGNAL INPUT
TMOD	; TEST MODE
TS	; TEST SIGNAL INPUT
TSTR	; TEST SIGNAL INPUT
VRB	; REFERENCE BOTTOM VOLTAGE
VRT	; REFERENCE TOP VOLTAGE

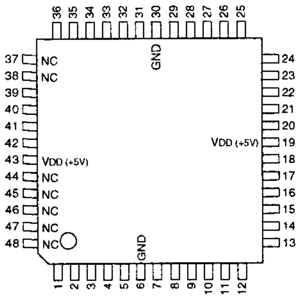
OUTPUT

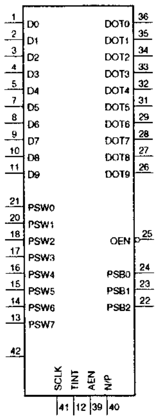
AT	; TEST SIGNAL OUTPUT
D0-D9	; DIGIRAL DATA OUTPUT
TO	; TEST PIN

CXK1203AR(SONY)FLAT PACKAGE

C-MOS DIGITAL LINE MEMORY

—TOP VIEW—

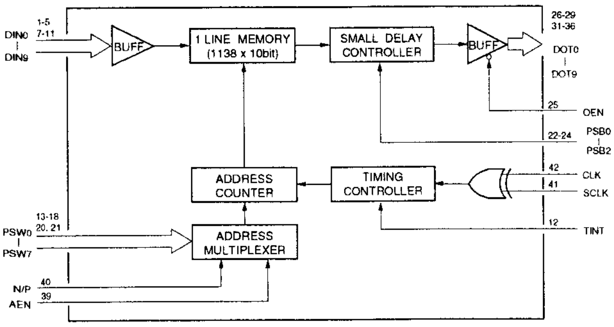

NC
GND
VDD (+5V)
VDD (+5V)
NC
GND


D0
D1
D2
D3
D4
D5
D6
D7
D8
D9
PSW0
PSW1
PSW2
PSW3
PSW4
PSW5
PSW6
PSW7
DOT0
DOT1
DOT2
DOT3
DOT4
DOT5
DOT6
DOT7
DOT8
DOT9
OEN
PSB0
PSB1
PSB2
SCLK
TINT
AEN
N/P

(VDD = +5V)

PIN NO.	I/O	SIGNAL	PIN NO.	I/O	SIGNAL	PIN NO.	I/O	SIGNAL	PIN NO.	I/O	SIGNAL
1	I	D0	13	I	PSW7	25	I	$\overline{\text{OEN}}$	37	—	N.C
2	I	D1	14	I	PSW6	26	O	DOT9	38	—	N.C
3	I	D2	15	I	PSW5	27	O	DOT8	39	I	AEN
4	I	D3	16	I	PSW4	28	O	DOT7	40	I	N/P
5	I	D4	17	I	PSW3	29	O	DOT6	41	I	SCLK
6	—	GND	18	I	PSW2	30	—	GND	42	I	CLK
7	I	D5	19	—	VDD	31	O	DOT5	43	—	VDD
8	I	D6	20	I	PSW1	32	O	DOT4	44	—	N.C
9	I	D7	21	I	PSW0	33	O	DOT3	45	—	N.C
10	I	D8	22	I	PSB2	34	O	DOT2	46	—	N.C
11	I	D9	23	I	PSB1	35	O	DOT1	47	—	N.C
12	I	TINT	24	I	PSB0	36	O	DOT0	48	—	N.C

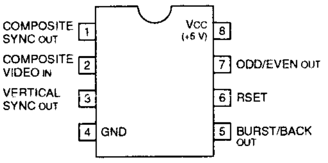
AEN ; LINE MEMORY SELECT
CLK ; CLOCK
DIN0-DIN9 ; VIDEO DATA INPUT
DOT0-DOT9 ; VIDEO DATA OUTPUT
N/P ; NTSC/PAL/SECAM SELECT
OEN ; OUTPUT ENABLE
PSB0-PSB2 ; DELAY STEP SELECT (1 BITxN)
PSW0-PSW7 ; DELAY STEP SELECT (8 BITxN)
SCLK ; CLOCK EDGE SELECT
TINT ; TEST

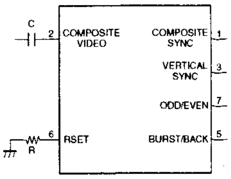

DIN0
DIN9
1-5
7-11
BUFF
1 LINE MEMORY
(1138 x 10bit)
SMALL DELAY
CONTROLLER
BUFF
26-29
31-36
DOT0
DOT9
25
OEN
22-24
PSB0
PSB2
ADDRESS
COUNTER
TIMING
CONTROLLER
42
CLK
41
SCLK
12
TINT
13-18
20, 21
PSW0
PSW7
ADDRESS
MULTIPLEXER
40
N/P
39
AEN

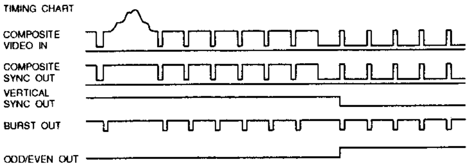
EL4581CS(ELT)FLAT PACKAGE

VIDEO SYNC SEPARATOR

— TOP VIEW —


COMPOSITE SYNC OUT
COMPOSITE VIDEO IN
VERTICAL SYNC OUT
GND
VCC (+5 V)
ODD/EVEN OUT
RSET
BURST/BACK OUT

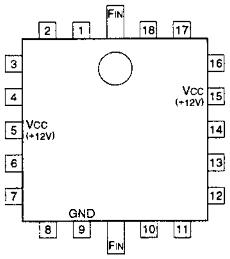

C
COMPOSITE VIDEO
RSET
R
COMPOSITE SYNC
VERTICAL SYNC
ODD/EVEN
BURST/BACK

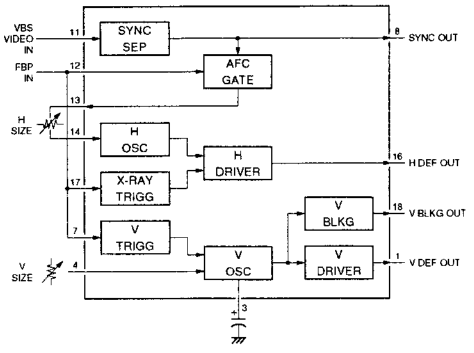


HA11423MP(HITACHI)FLAT PACKAGE

TV H/V SYNC SIGNAL PROCESSOR

-TOP VIEW-

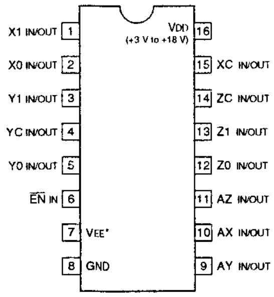

FIN
Vcc (+12V)
Vcc (+12V)
GND
FIN

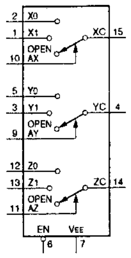

VBS VIDEO IN
FBP IN
H SIZE
V SIZE
SYNC SEP
AFC GATE
H OSC
H DRIVER
X-RAY TRIGG
V TRIGG
V BLKG
V OSC
V DRIVER
SYNC OUT
H DEF OUT
V BLKG OUT
V DEF OUT

HD14053BFP(HITACHI)FLAT PACKAGE

C-MOS TRIPLE 2-CHANNEL ANALOG MULTIPLEXERS/DEMULTIPLEXERS

— TOP VIEW —


X1 IN/OUT 1
X0 IN/OUT 2
Y1 IN/OUT 3
YC IN/OUT 4
Y0 IN/OUT 5
EN IN 6
7 VEE*
8 GND
VDD (+3 V to +18 V) 16
15 XC IN/OUT
14 ZC IN/OUT
13 Z1 IN/OUT
12 Z0 IN/OUT
11 AZ IN/OUT
10 AX IN/OUT
9 AY IN/OUT


2 X0
1 X1
OPEN
10 AX
XC 15
5 Y0
3 Y1
OPEN
9 AY
YC 4
12 Z0
13 Z1
OPEN
11 AZ
ZC 14
EN
VEE
6
7

VEE*: VDD − VEE + 3 V + 18 V

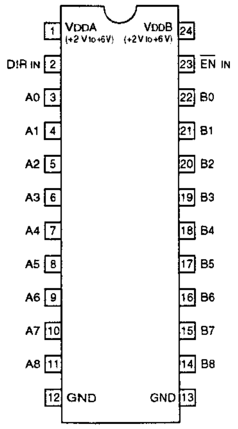
CONT. INPUTS		ON CHANNEL
EN	A (X, Y, Z)	
0	0	0
0	1	1
1	X	OPEN

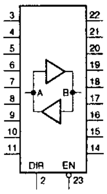
0 ; LOW LEVEL
1 ; HIGH LEVEL
X ; DON'T CARE

HD151015T(HITACHI)FLAT PACKAGE

C-MOS 9-BIT LEVEL SHIFTER/TRANSCEIVER WITH 3-STATE OUTPUTS

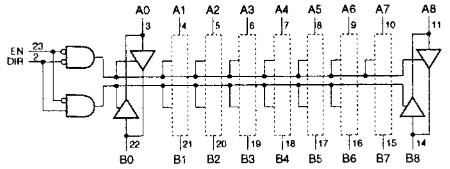
— TOP VIEW —


1 VDDA (+2 V to +6 V)
DIR IN 2
A0 3
A1 4
A2 5
A3 6
A4 7
A5 8
A6 9
A7 10
A8 11
12 GND
VDDB (+2 V to +6 V) 24
23 EN IN
22 B0
21 B1
20 B2
19 B3
18 B4
17 B5
16 B6
15 B7
14 B8
GND 13


3
4
5
6
7
8
9
10
11
22
21
20
19
18
17
16
15
14
A
B
DIR
EN
2
23

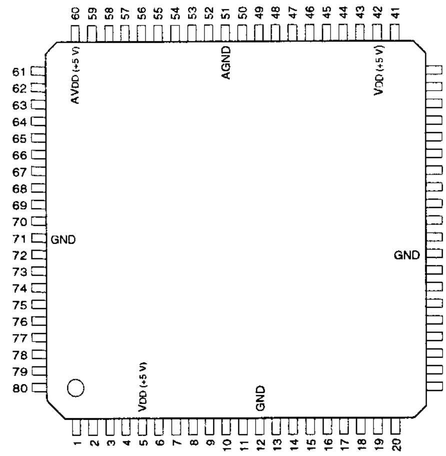
EN	DIR	OPERATION
0	0	B to A
0	1	A to B
1	X	HI-Z

0 ; LOW LEVEL
1 ; HIGH LEVEL
X ; DON'T CARE
HI-Z ; HIGH IMPEDANCE

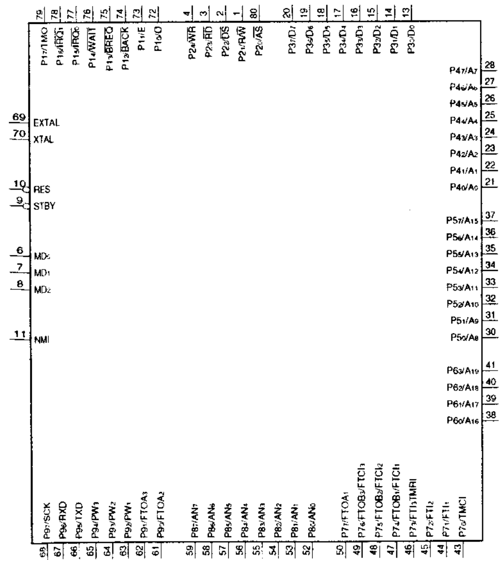

A0
A1
A2
A3
A4
A5
A6
A7
A8
3
4
5
6
7
8
9
10
11
EN 23
DIR 2
22
21
20
19
18
17
16
15
14
B0
B1
B2
B3
B4
B5
B6
B7
B8

HD6475328F10(HITACHI)

C-MOS 16-BIT MICROPROCESSOR
— TOP VIEW —


AVDD (+5 V)
AGND
VDD (+5 V)
GND
GND
VDD (+5 V)
GND

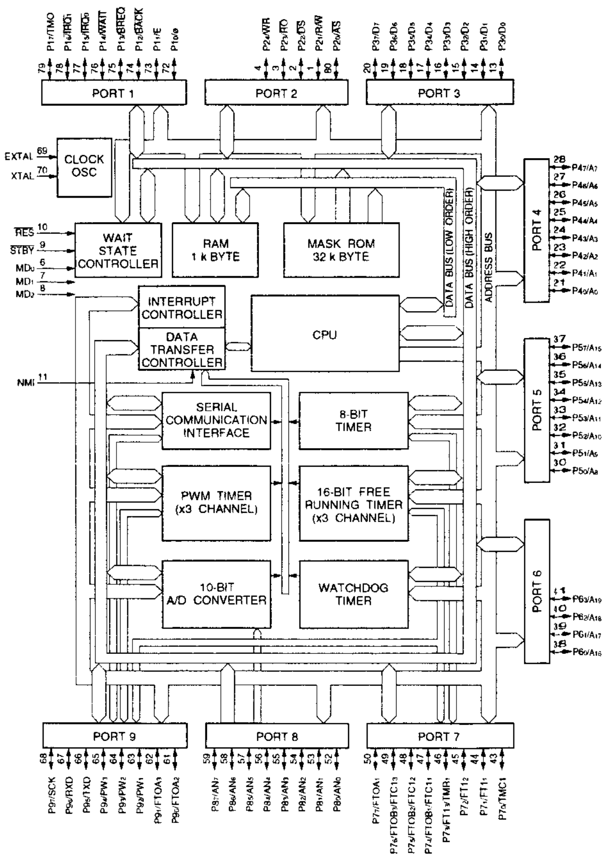
PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL
1	I/O	P21/R/$\overline{\text{W}}$	28	I/O	P47/A7	55	I/O	P83/AN3
2	I/O	P22/$\overline{\text{DS}}$	29	—	GND	56	I/O	P84/AN4
3	I/O	P23/$\overline{\text{RD}}$	30	I/O	P50/A8	57	I/O	P85/AN5
4	I/O	P24/$\overline{\text{WR}}$	31	I/O	P51/A9	58	I/O	P86/AN6
5	—	VDD	32	I/O	P52/A10	59	I/O	P87/AN7
6	I	MD0	33	I/O	P53/A11	60	—	AVDD
7	I	MD1	34	I/O	P54/A12	61	I/O	P90/FTOA2
8	I	MD2	35	I/O	P55/A13	62	I/O	P91/FTOA3
9	I	$\overline{\text{STBY}}$	36	I/O	P56/A14	63	I/O	P92/PW1
10	I	$\overline{\text{RES}}$	37	I/O	P57/A15	64	I/O	P93/PW2
11	I	NMI	38	I/O	P60/A16	65	I/O	P94/PW3
12	—	GND	39	I/O	P61/A17	66	I/O	P95/TXD
13	I/O	P30/D0	40	I/O	P62/A18	67	I/O	P96/RXD
14	I/O	P31/D1	41	I/O	P63/A19	68	I/O	P97/SCK
15	I/O	P32/D2	42	—	VDD	69	I	EXTAL
16	I/O	P33/D3	43	I/O	P70/TMCI	70	I	XTAL
17	I/O	P34/D4	44	I/O	P71/FTI1	71	—	Vss
18	I/O	P35/D5	45	I/O	P72/FTI2	72	I/O	P10/ø
19	I/O	P36/D6	46	I/O	P73/FTI3/TMRI	73	I/O	P11/E
20	I/O	P37/D7	47	I/O	P74/FTOB1/FTCI1	74	I/O	P12/$\overline{\text{BACK}}$
21	I/O	P40/A0	48	I/O	P75/FTOB2/FTCI2	75	I/O	P12/$\overline{\text{BREQ}}$
22	I/O	P41/A1	49	I/O	P76/FTOB3/FTCI3	76	I/O	P12/$\overline{\text{WAIT}}$
23	I/O	P42/A2	50	O	P77/FTOA1	77	I/O	P12/$\overline{\text{IRQ0}}$
24	I/O	P43/A3	51	—	AGND	78	I/O	P12/$\overline{\text{IRQ1}}$
25	I/O	P44/A4	52	I/O	P80/AN0	79	I/O	P12/TMO
26	I/O	P45/A5	53	I/O	P81/AN1	80	I/O	P12/$\overline{\text{AS}}$
27	I/O	P46/A6	54	I/O	P82/AN2			


EXTAL
XTAL
RES
STBY
MD0
MD1
MD2
NMI

INPUT
AN0-AN7 ; ANALOG INPUT
BREQ ; BUS REQUEST
EXTAL ; CONNECTED TO CRYSTAL OSCILLATOR.
ETCI1-FTCI3 ; FRT COUNTER CLOCK INPUT (CHANNEL 1 TO 3)
FTI1-FTI3 ; FRT INPUT CAPTURE INPUT (CHANNEL 1 TO 3)
IRQ0, 1 ; INTERRUPTION REQUEST 0 AND 1
MD0-MD2 ; MODE SETTING
NMI ; NON MASKABLE INTERRUPTION
P80-P87 ; PORT 8
RES ; RESET
RXD ; RECEIVE DATA
STBY ; STANDBY
TMCI ; 8-BIT TIMER CLOCK INPUT
TMRI ; 8-BIT TIMER COUNTER RESET INPUT
WAIT ; WAIT
XTAL ; CONNECTED TO CRYSTAL OSCILLATOR.

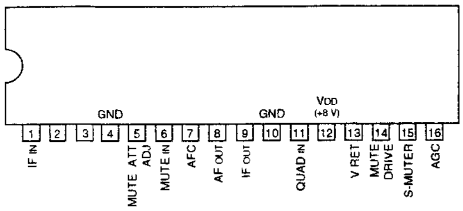
OUTPUT
A0-A19 ; ADDRESS BUS
AS ; ADDRESS STROBE
BACK ; BUS REQUEST ACKNOWLEDGE
DS ; DATA STROBE
E ; ENABLE CLOCK
FTOA1-FTOA3 ; FRT OUTPUT COMPARE A OUTPUT (CHANNEL 1 TO 3)
FTOB1-FTOB3 ; FRT OUTPUT COMPARE B OUTPUT (CHANNEL 1 TO 3)
PW1-PW3 ; PWM TIMER OUTPUT (CHANNEL 1 TO 3)
R/W ; READ/WRITE
RD ; READ
TMO ; 8-BIT TIMER OUTPUT
TXD ; SEND DATA
WR ; WRITE
ø ; SYSTEM CLOCK

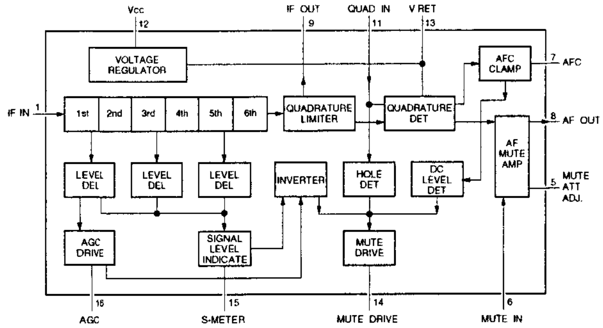
INPUT/OUTPUT
D0-D7 ; DATA BUS
P10-P17 ; PORT 1
P20-P24 ; PORT 2
P30-P37 ; PORT 3
P40-P47 ; PORT 4
P50-P57 ; PORT 5
P60-P63 ; PORT 6
P70-P77 ; PORT 7
P90-P97 ; PORT 9
SCK ; SERIAL CLOCK INPUT/OUTPUT


PORT 1
PORT 2
PORT 3
PORT 4
PORT 5
PORT 6
PORT 7
PORT 8
PORT 9
CLOCK OSC
EXTAL
XTAL
WAIT STATE CONTROLLER
RES
STBY
MD0
MD1
MD2
RAM 1 k BYTE
MASK ROM 32 k BYTE
DATA BUS (LOW ORDER)
DATA BUS (HIGH ORDER)
ADDRESS BUS
INTERRUPT CONTROLLER
DATA TRANSFER CONTROLLER
CPU
NMI
SERIAL COMMUNICATION INTERFACE
8-BIT TIMER
PWM TIMER (x3 CHANNEL)
16-BIT FREE RUNNING TIMER (x3 CHANNEL)
10-BIT A/D CONVERTER
WATCHDOG TIMER

LA1140(SANYO)

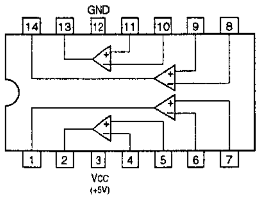
IF AMP, LIMITTER, DETECTOR, MUTING, + FM CS
— PRINTED SIDE VIEW —


GND
GND
VDD (+8 V)
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
IF IN
MUTE ATT ADJ
MUTE IN
AFC
AF OUT
IF OUT
QUAD IN
V RET
MUTE DRIVE
S-MUTER
AGC


Vcc
12
IF OUT
9
QUAD IN
11
V RET
13
VOLTAGE REGULATOR
AFC CLAMP
7 AFC
IF IN 1
1st
2nd
3rd
4th
5th
6th
QUADRATURE LIMITER
QUADRATURE DET
8 AF OUT
AF MUTE AMP
LEVEL DEL
LEVEL DEL
LEVEL DEL
INVERTER
HOLE DET
DC LEVEL DET
5 MUTE ATT ADJ.
AGC DRIVE
SIGNAL LEVEL INDICATE
MUTE DRIVE
16
AGC
15
S-METER
14
MUTE DRIVE
6
MUTE IN

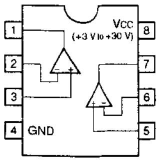
LM339NS(TI)FLAT PACKAGE
LM339PW(TI)FLAT PACKAGE-

QUAD COMPARATORS
—TOP VIEW—


GND
14
13
12
11
10
9
8
1
2
3
4
5
6
7
Vcc (+5V)

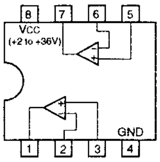
LM358PS(TI)FLAT PACKAGE
UPC358G2(NEC)FLAT PACKAGE

DUAL OPERATIONAL AMPLIFIERS
— TOP VIEW —


1
2
3
4
GND
Vcc (+3 V to +30 V)
8
7
6
5

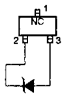
LM393PS(TI)FLAT PACKAGE
UPC393G2(NEC)FLAT PACKAGE

DUAL VOLTAGE COMPARATORS
—TOP VIEW—


8
7
6
5
Vcc (+2 to +36V)
GND
1
2
3
4

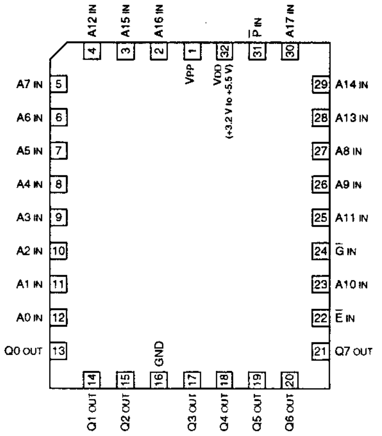
LM4040BIM3X(NS)

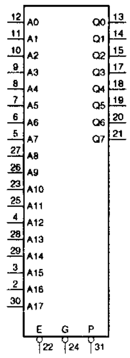
PRECISION MICROPOWER SHUNT VOLTAGE REFERENCE
— TOP VIEW —



M27V201-200L6(SGS)CHIP CARRIER

C-MOS 2M (256×8) -BIT UV ERASABLE PROM AND OTP ROM
— TOP VIEW —


A12 IN
A15 IN
A16 IN
P IN
A17 IN
4
3
2
1
32
31
30
VPP
VDD (+3.2 V to +5.5 V)
A7 IN 5
A6 IN 6
A5 IN 7
A4 IN 8
A3 IN 9
A2 IN 10
A1 IN 11
A0 IN 12
Q0 OUT 13
29 A14 IN
28 A13 IN
27 A8 IN
26 A9 IN
25 A11 IN
24 G IN
23 A10 IN
22 E IN
21 Q7 OUT
GND
14
15
16
17
18
19
20
Q1 OUT
Q2 OUT
Q3 OUT
Q4 OUT
Q5 OUT
Q6 OUT


12 A0
11 A1
10 A2
9 A3
8 A4
7 A5
6 A6
5 A7
27 A8
26 A9
23 A10
25 A11
4 A12
28 A13
29 A14
3 A15
2 A16
30 A17
Q0 13
Q1 14
Q2 15
Q3 17
Q4 18
Q5 19
Q6 20
Q7 21
E
G
P
22
24
31

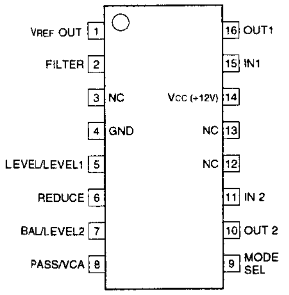
A0 - A17 ; ADDRESS INPUTS
Q0 - Q7 ; DATA OUTPUTS
$\overline{E}$; CHIP ENABLE INPUT
$\overline{G}$; OUTPUT ENABLE INPUT
$\overline{P}$, PROGRAM INPUT
VPP ; PROGRAM SUPPLY (12.75 V)

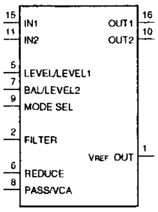
MODE	E	G	E	E	E	Q0 -Q7
READ	0	0	X	X	X	DATA OUT
OUTPUT DISABLE	0	1	X	X	X	HI-Z
PROGRAM	0	1	⊓⊏	X	VPP	DATA IN
VERIFY	0	0	1	X	VPP	DATA OUT
PROGRAM INHIBIT	1	X	X	X	VPP	HI-Z
STANDBY	1	X	X	X	X	HI-Z
ELECTRONIC SIGNATURE	0	0	1	VID	VDD	CODES

0 ; INPUT LOW VOLTAGE
1 ; INPUT HIGH VOLTAGE
X ; DON'T CARE
VID ; 12 V ± 0.5 V
HI-Z ; HIGH IMPEDANCE

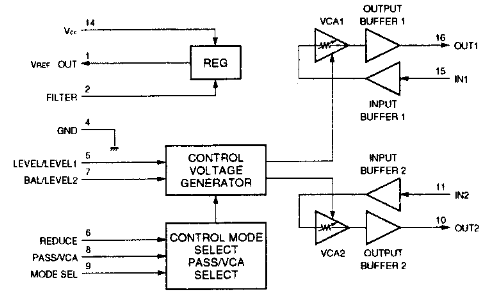
M51132FP(MITSUBISHI)FLAT PACKAGE

2-CHANNEL ELECTRONIC LEVEL CONTROL
—TOP VIEW—


VREF OUT 1
FILTER 2
3 NC
4 GND
LEVEL/LEVEL1 5
REDUCE 6
BAL/LEVEL2 7
PASS/VCA 8
16 OUT1
15 IN1
VCC (+12V) 14
NC 13
NC 12
11 IN 2
10 OUT 2
9 MODE SEL

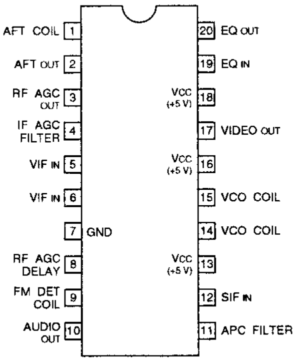

15 IN1
11 IN2
16 OUT1
10 OUT2
5 7 LEVEL/LEVEL1
9 BAL/LEVEL2
MODE SEL
2 FILTER
1 VREF OUT
6 REDUCE
8 PASS/VCA

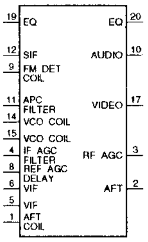
BAL/LEVEL2 ; BALANCE/LEVEL2 CONTROL
FILTER ; FILTER
IN1 ; INPUT 1
IN2 ; INPUT 2
MODE SEL ; MODE SELECT
OUT1 ; OUTPUT 1
OUT2 ; OUTPUT 2
PASS/VCA ; PASS/VCA CONTROL SWITCH
REDUCE ; SWITCHING NOISE REDUCE
LEVEL/LEVEL1 ; LEVEL/LEVEL1 CONTROL
V REF OUT ; REFERENCE VOLTAGE OUTPUT

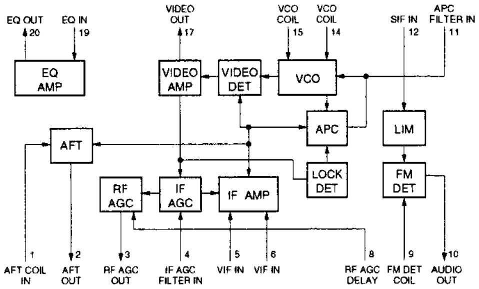

Vcc 14
VREF OUT 1
FILTER 2
GND 4
REG
LEVEL/LEVEL1 5
BAL/LEVEL2 7
CONTROL VOLTAGE GENERATOR
REDUCE 6
PASS/VCA 8
MODE SEL 9
CONTROL MODE SELECT PASS/VCA SELECT
VCA1
OUTPUT BUFFER 1
16 OUT1
15 IN1
INPUT BUFFER 1
INPUT BUFFER 2
11 IN2
10 OUT2
VCA2
OUTPUT BUFFER 2

M52313SP(MITSUBISHI)

PLL VIF/SIF
— TOP VIEW —

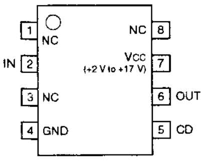

AFT COIL 1
AFT OUT 2
RF AGC OUT 3
IF AGC FILTER 4
VIF IN 5
VIF IN 6
7 GND
RF AGC DELAY 8
FM DET COIL 9
AUDIO OUT 10
20 EQ OUT
19 EQ IN
VCC (+5 V) 18
17 VIDEO OUT
VCC (+5 V) 16
15 VCO COIL
14 VCO COIL
VCC (+5 V) 13
12 SIF IN
11 APC FILTER

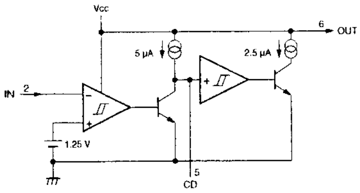

19 EQ
EQ 20
12 SIF
9 FM DET COIL
AUDIO 10
11 APC FILTER
14 VCO COIL
15 VCO COIL
VIDEO 17
4 IF AGC FILTER
8 RF AGC DELAY
RF AGC 3
6 VIF
5 VIF
AFT 2
1 AFT COIL


EQ OUT 20
EQ IN 19
VIDEO OUT 17
VCO COIL 15
VCO COIL 14
SIF IN 12
APC FILTER IN 11
EQ AMP
VIDEO AMP
VIDEO DET
VCO
APC
LIM
AFT
LOCK DET
FM DET
RF AGC
IF AGC
IF AMP
1 AFT COIL IN
2 AFT OUT
3 RF AGC OUT
4 IF AGC FILTER IN
5 VIF IN
6 VIF IN
8 RF AGC DELAY
9 FM DET COIL
10 AUDIO OUT

M51958A(MITSUBISHI)FLAT PACKAGE

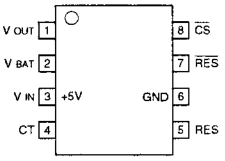
VOLTAGE DETECT DELAY
— TOP VIEW —

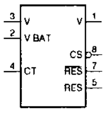

1 NC
IN 2
3 NC
4 GND
NC 8
Vcc (+2 V to +17 V) 7
6 OUT
5 CD


Vcc
6 OUT
5 µA
2.5 µA
IN 2
1.25 V
5 CD

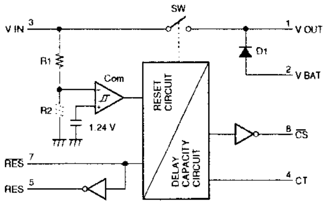
M62021FP(MITSUBISHI)FLAT PACKAGE

SELECTION SW BUILT-IN SYSTEM RESET
— TOP VIEW —


V OUT 1
V BAT 2
V IN 3 +5V
CT 4
8 CS
7 RES
GND 6
5 RES

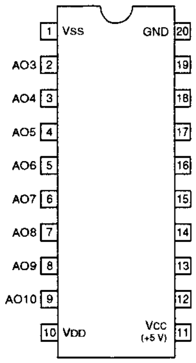

3 V
2 V BAT
4 CT
V 1
CS 8
RES 7
RES 5

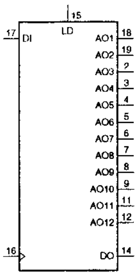
CS : CHIP SELECT OUTPUT
CT : DELAY CAPACITY INPUT
RES : RESET OUTPUT
VBAT : VIDEO SIGNAL BACKUP INPUT
VIN : VIDEO SIGNAL INPUT
VOUT : VIDEO SIGNAL OUTPUT


SW
V IN 3
1 V OUT
D1
2 V BAT
R1
R2
Com
1.24 V
RESET CIRCUIT
DELAY CAPACITY CIRCUIT
8 CS
RES 7
RES 5
4 CT

M62352GP(MITSUBISHI)FLAT PACKAGE

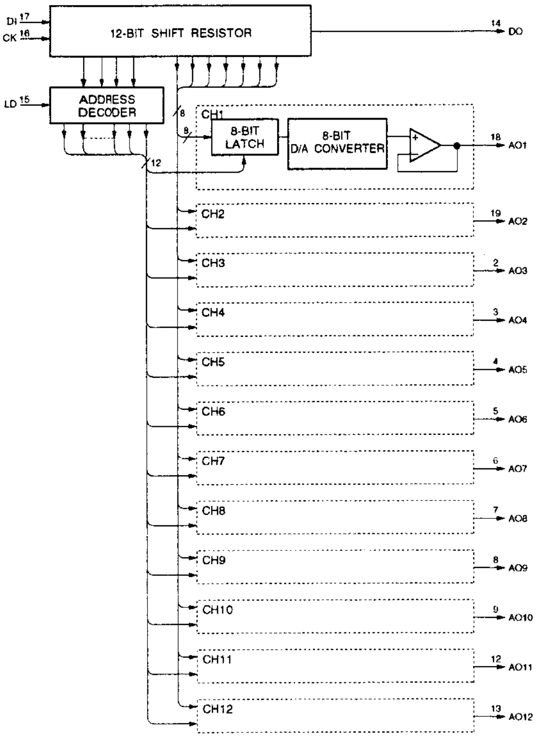
C-MOS 8-BITx12 CHANNEL D/A CONVERTER
(WITH BUFFER OPERATIONAL AMPLIFIER)
— TOP VIEW —


1 VSS
GND 20
AO3 2
19 AO2
AO4 3
18 AO1
AO5 4
17 DI
AO6 5
16 CK
AO7 6
15 LD
AO8 7
14 DO
AO9 8
13 AO12
AO10 9
12 AO11
10 VDD
VCC (+5 V) 11


15 LD
17 DI
AO1 18
AO2 19
AO3 2
AO4 3
AO5 4
AO6 5
AO7 6
AO8 7
AO9 8
AO10 9
AO11 11
AO12 12
16
DO 14

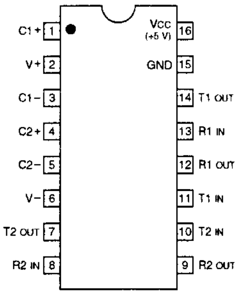
AO1-AO12 ; 8-BIT D/A OUTPUTS
CK ; CLOCK INPUT
DI ; SERIAL DATA INPUT
DO ; DATA OUTPUT

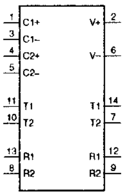
NOTE:
3.5 V < VDD < Vcc
-3.5 V < Vss < Vcc


DI 17
CK 16
12-BIT SHIFT RESISTOR
14 DO
LD 15
ADDRESS DECODER
8
12
CH1
8-BIT LATCH
8-BIT D/A CONVERTER
18 AO1
CH2
19 AO2
CH3
2 AO3
CH4
3 AO4
CH5
4 AO5
CH6
5 AO6
CH7
6 AO7
CH8
7 AO8
CH9
8 AO9
CH10
9 AO10
CH11
12 AO11
CH12
13 AO12

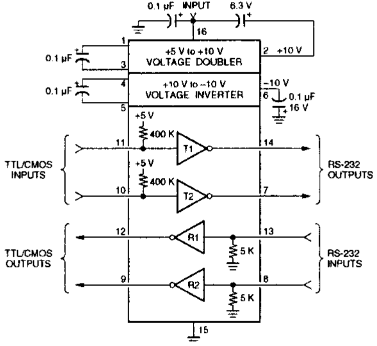
MAX202CSE(MAXIM)

RS-232 TRANSMITTER/RECEIVER
— TOP VIEW —


C1+ 1
V+ 2
C1- 3
C2+ 4
C2- 5
V- 6
T2 OUT 7
R2 IN 8
VCC (+5 V) 16
GND 15
14 T1 OUT
13 R1 IN
12 R1 OUT
11 T1 IN
10 T2 IN
9 R2 OUT

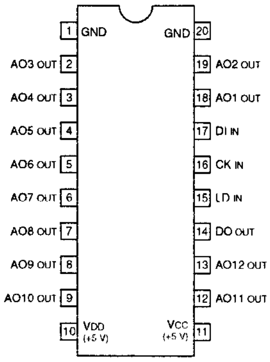

1 C1+
3 C1-
4 C2+
5 C2-
V+ 2
V- 6
11 T1
10 T2
T1 14
T2 7
13 R1
8 R2
R1 12
R2 9

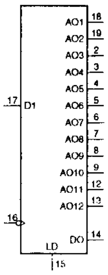
R1, 2 ; RECEIVER 1, 2
T1, 2 ; TRANSMITTER 1, 2


+5 V INPUT
0.1 µF
0.1 µF 6.3 V
16
+5 V to +10 V VOLTAGE DOUBLER
2 +10 V
+10 V to -10 V VOLTAGE INVERTER
-10 V
0.1 µF 16 V
0.1 µF
+5 V
400 K
T1
T2
R1
R2
5 K
TTL/CMOS INPUTS
RS-232 OUTPUTS
TTL/CMOS OUTPUTS
RS-232 INPUTS
15

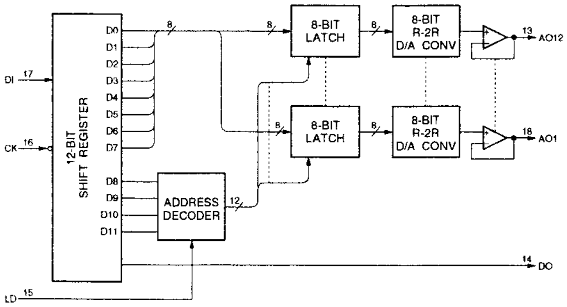
MB88346BPFV(FUJITSU)FLAT PACKAGE(SMALL)

C-MOS 8-BIT D/A CONVERTER
— TOP VIEW —


1 GND
GND 20
AO3 OUT 2
19 AO2 OUT
AO4 OUT 3
18 AO1 OUT
AO5 OUT 4
17 DI IN
AO6 OUT 5
16 CK IN
AO7 OUT 6
15 LD IN
AO8 OUT 7
14 DO OUT
AO9 OUT 8
13 AO12 OUT
AO10 OUT 9
12 AO11 OUT
10 VDD (+5 V)
VCC (+5 V) 11


17 DI
AO1 18
AO2 19
AO3 2
AO4 3
AO5 4
AO6 5
AO7 6
AO8 7
AO9 8
AO10 9
AO11 12
AO12 13
16
LD 15
DO 14

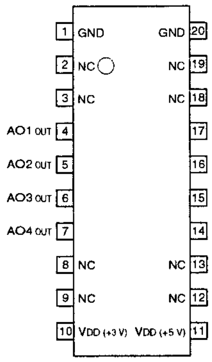
AO1 - AO12 ; 8-BIT D/A OUTPUTS
CK ; CLOCK INPUT
DI ; SERIAL DATA INPUT
DO ; DATA OUTPUT
LD ; DATA LOAD CONTROL INPUT (H ; LOAD)

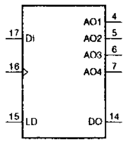

DI 17
CK 16
LD 15
12-BIT SHIFT REGISTER
D0
D1
D2
D3
D4
D5
D6
D7
D8
D9
D10
D11
ADDRESS DECODER
12
8
8-BIT LATCH
8-BIT R-2R D/A CONV
13 AO12
18 AO1
14 DO

MB88351PFV(FUJITSU)FLAT PACKAGE

C-MOS 12-BIT D/A CONVERTER WITH OPERATIONAL AMPLIFIER

— TOP VIEW —


1 GND
2 NC
3 NC
AO1 OUT 4
AO2 OUT 5
AO3 OUT 6
AO4 OUT 7
8 NC
9 NC
10 VDD (+3 V)
GND 20
NC 19
NC 18
17 DI IN
16 CLK IN
15 LD IN
14 DO OUT
NC 13
NC 12
VDD (+5 V) 11


17 DI
16
15 LD
AO1 4
AO2 5
AO3 6
AO4 7
DO 14

INPUT

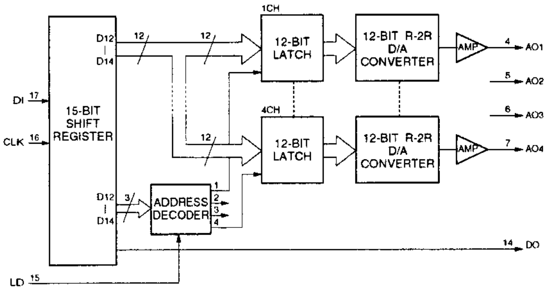
CLK	; SHIFT CLOCK
DI	; SERIAL DATA
LD	; DECODER AND D/A REGISTER TO LOAD

OUTPUT

AO1-AO4	; ANALOG DATA
DO	; MBS BIT DATA IN 15-BIT SHIFT REGISTER

D12	D13	D14	ADDRESS SELECT
0	0	0	DON'T CARE
0	0	1	AO1 SELECT
0	1	0	AO2 SELECT
0	1	1	AO3 SELECT
1	0	0	AO4 SELECT
1	0	1	DON'T CARE
1	1	0	DON'T CARE
1	1	1	DON'T CARE

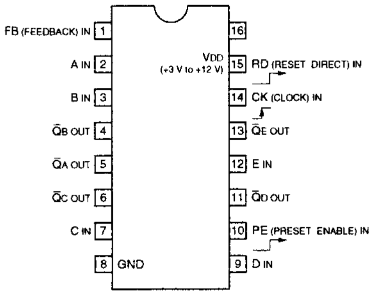
0 : LOW LEVEL
1 : HIGH LEVEL

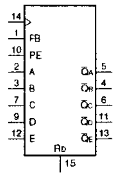

DI 17
CLK 16
LD 15
15-BIT SHIFT REGISTER
D12 | D14
12
1CH
4CH
12-BIT LATCH
12-BIT R-2R D/A CONVERTER
AMP
4 AO1
5 AO2
6 AO3
7 AO4
3
ADDRESS DECODER
1
2
3
4
14 DO

MC14018BF(MOTOROL)FLAT PACKAGE

C-MOS PRESETTABLE DIVIDE-BY-N COUNTER

— TOP VIEW —


FB (FEEDBACK) IN 1
A IN 2
B IN 3
Q̄B OUT 4
Q̄A OUT 5
Q̄C OUT 6
C IN 7
8 GND
16
VDD (+3 V to +12 V)
15 RD (RESET DIRECT) IN
14 CK (CLOCK) IN
13 Q̄E OUT
12 E IN
11 Q̄D OUT
10 PE (PRESET ENABLE) IN
9 D IN

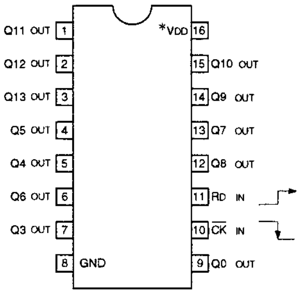

14
1 FB
10 PE
2 A
3 B
7 C
9 D
12 E
RD
15
Q̄A 5
Q̄B 4
Q̄C 6
Q̄D 11
Q̄E 13

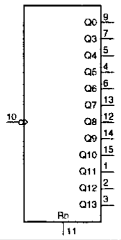
DIVIDE BY	CONNECT TO FB INPUT	VIA	RESULTS FROM EACH Q̄ OUTPUT
10	Q̄E	DIRECT	5 COUNTS HIGH, 5 COUNTS LOW
9	Q̄D, Q̄E	AND GATE	5 COUNTS HIGH, 4 COUNTS LOW
8	Q̄D	DIRECT	4 COUNTS HIGH, 4 COUNTS LOW
7	Q̄C, Q̄D	AND GATE	4 COUNTS HIGH, 3 COUNTS LOW
6	Q̄C	DIRECT	3 COUNTS HIGH, 3 COUNTS LOW
5	Q̄B, Q̄C	AND GATE	3 COUNTS HIGH, 2 COUNTS LOW
4	Q̄B	DIRECT	2 COUNTS HIGH, 2 COUNTS LOW
3	Q̄A, Q̄B	AND GATE	2 COUNTS HIGH, 1 COUNTS LOW
2	Q̄A	DIRECT	1 COUNTS HIGH, 1 COUNTS LOW

MC14020BF(MOTOROLA)FLAT PACKAGE

C-MOS 14-STAG RIPPLE-CARRY BINARY COUNTER/DRIVER

—TOP VIEW—


Q11 OUT 1
Q12 OUT 2
Q13 OUT 3
Q5 OUT 4
Q4 OUT 5
Q6 OUT 6
Q3 OUT 7
8 GND
*VDD 16
15 Q10 OUT
14 Q9 OUT
13 Q7 OUT
12 Q8 OUT
11 RD IN
10 CK IN
9 Q0 OUT


10
Q0 9
Q3 7
Q4 5
Q5 4
Q6 6
Q7 13
Q8 12
Q9 14
Q10 15
Q11 1
Q12 2
Q13 3
RD
11

*

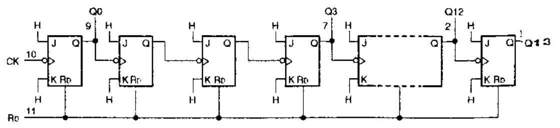
TYPE	VDD
HC4020	+2 to +6V
14020, 4020, 84020	+3 to +18V

COUNT		BINARY OUTPUTS											
		Q13	Q12	Q11	Q10	Q9	Q8	Q7	Q6	Q5	Q4	Q3	Q0
0	0000	0	0	0	0	0	0	0	0	0	0	0	0
1	0001	0	0	0	0	0	0	0	0	0	0	0	1
2	0002	0	0	0	0	0	0	0	0	0	0	0	0
3	0003	0	0	0	0	0	0	0	0	0	0	0	1
4	0004	0	0	0	0	0	0	0	0	0	0	0	0
⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮
16380	4FFC	1	1	1	1	1	1	1	1	1	1	1	0
16381	4FFD	1	1	1	1	1	1	1	1	1	1	1	1
16382	4FFE	1	1	1	1	1	1	1	1	1	1	1	0
16383	4FFF	1	1	1	1	1	1	1	1	1	1	1	1

IN HEXADECIMAL
IN DECIMAL

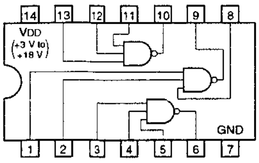
0 ; LOW LEVEL
1 ; HIGH LEVEL

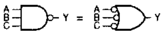
RD	Q13-Q0
1	ALL LOW
0	COUNT


Q0
Q3
Q12
H
9
7
2
1
Q13
CK 10
J
Q
K RD
K
RD 11

MC14023BF(MOTOROLA)FLAT PACKAGE

C-MOS 3-INPUT NAND GATE
— TOP VIEW —


14
13
12
11
10
9
8
VDD
(+3 V to +18 V)
GND
1
2
3
4
5
6
7



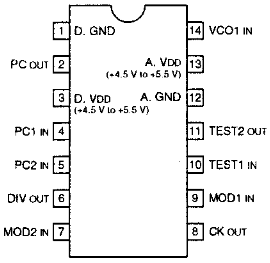
$Y = \overline{A \bullet B \bullet C} = \overline{A} + \overline{B} + \overline{C}$

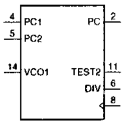
A	B	C	Y
X	X	0	1
X	0	X	1
0	X	X	1
1	1	1	0

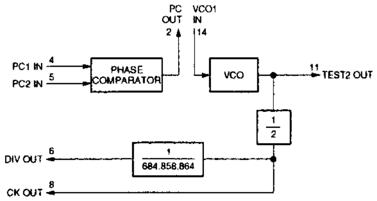
0 ; LOW LEVEL
1 ; HIGH LEVEL
X ; DON'T CARE

MN6790S(MATSUSHITA)

C-MOS CLOCK GENERATOR
— TOP VIEW —


1 D. GND
PC OUT 2
3 D. VDD (+4.5 V to +5.5 V)
PC1 IN 4
PC2 IN 5
DIV OUT 6
MOD2 IN 7
14 VCO1 IN
A. VDD (+4.5 V to +5.5 V) 13
A. GND 12
11 TEST2 OUT
10 TEST1 IN
9 MOD1 IN
8 CK OUT


4 PC1
5 PC2
14 VCO1
PC 2
TEST2 11
DIV 6
8

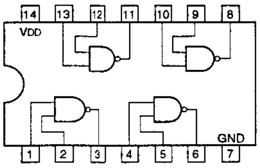

PC OUT 2
VCO1 IN 14
PC1 IN 4
PC2 IN 5
PHASE COMPARATOR
VCO
11 TEST2 OUT
1/2
DIV OUT 6
1/684,858,864
CK OUT 8

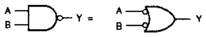
MOD1	MOD2	FREQUENCY RATIO	VCO	MOTE
0	0	1/684	OSCILLATION	——
1	0	1/858		
0	1	1/864		
1	1	——	STANDSTILL	CK = DIV = L

0 : LOW LEVEL
1 ; HIGH LEVEL

MC74HC00AF(MOTOROLA)FLAT PACKAGE
TC74HC00AF(TOSHIBA)FLAT PACKAGE
TC74VHC00FS(EL)(TOSHIBA)FLAT PACKAGE(SMALL)

C-MOS QUAD 2-INPUT NAND GATES
—TOP VIEW—


14
13
12
11
10
9
8
VDD
GND
1
2
3
4
5
6
7



$Y = \overline{A \bullet B} = \overline{A} + \overline{B}$

A	B	Y
0	0	1
0	1	1
1	0	1
1	1	0

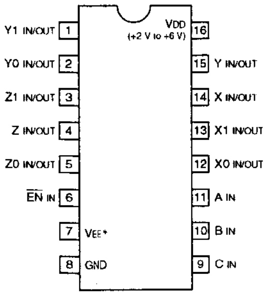
0 ; LOW LEVEL
1 ; HIGH LEVEL

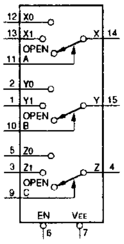
NOTE:

TYPE	VDD
TC74AC00 TYPE TC74VHC00	+2 to +5.5V
MC74HCT00N	+5V
74ACT00 TYPE	+4.5 to +5.5V
OTHER TYPES	+2 to +6V

MC74HC4053F(MOTOROLA)FLAT PACKAGE
TC74HC4053AFS(TOSHIBA)FLAT PACKAGE

C-MOS TRIPLE 2-CHANNEL ANALOG MULTIPLEXER/DEMULTIPLEXER
— TOP VIEW —


Y1 IN/OUT 1
Y0 IN/OUT 2
Z1 IN/OUT 3
Z IN/OUT 4
Z0 IN/OUT 5
EN IN 6
7 VEE*
8 GND
VDD (+2 V to +6 V) 16
15 Y IN/OUT
14 X IN/OUT
13 X1 IN/OUT
12 X0 IN/OUT
11 A IN
10 B IN
9 C IN


12 X0
13 X1
OPEN
11 A
X 14
2 Y0
1 Y1
OPEN
10 B
Y 15
5 Z0
3 Z1
OPEN
9 C
Z 4
EN
VEE
6
7

VEE*: VDD – VEE = +3 V to +12 V
VEE ≤ GND

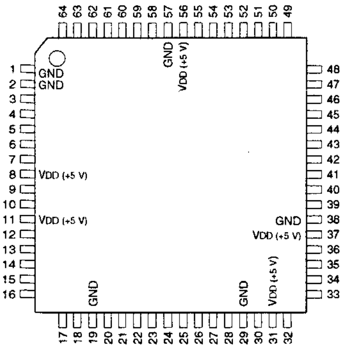
CONTROL INPUTS				ON CHANNEL		
EN	SELECT					
	C	B	A			
0	0	0	0	Z0	Y0	X0
0	0	0	1	Z0	Y0	X1
0	0	1	0	Z0	Y1	X0
0	0	1	1	Z0	Y1	X1
0	1	0	0	Z1	Y0	X0
0	1	0	1	Z1	Y0	X1
0	1	1	0	Z1	Y1	X0
0	1	1	1	Z1	Y1	X1
1	X	X	X	OPEN		

0 ; LOW LEVEL
1 ; HIGH LEVEL
X ; DON'T CARE

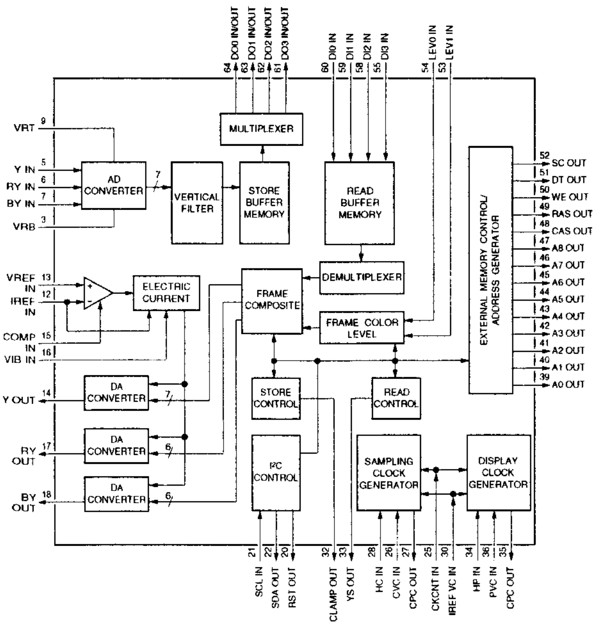
MN8232A(MATSUSHITA)

PICTURE IN PICTURE/PICTURE OUT PICTURE CONTROLLER

— TOP VIEW —


GND
GND
VDD (+5 V)
VDD (+5 V)
GND
VDD (+5 V)
GND
VDD (+5 V)
GND
GND
VDD (+5 V)

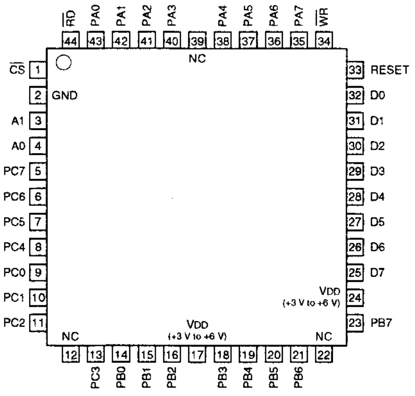
PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL
1	—	GND	17	O	RY	33	O	YS	49	O	RAS
2	—	GND	18	O	BY	34	I	HP	50	O	WE
3	—	VRB	19	—	GND	35	O	PPC	51	O	DT
4	I	TEST0	20	I	RST	36	I	PVC	52	O	SC
5	I	Y	21	I	SCL	37	—	VDD	53	I	LEV1
6	I	RY	22	O	SDA	38	—	GND	54	I	LEV0
7	I	BY	23	I	VPD	39	O	A0	55	I	DI3
8	—	VDD	24	I	VCD	40	O	A1	56	—	VDD
9	—	VRT	25	I	CKCNT	41	O	A2	57	—	GND
10	I	TEST1	26	I	CVC	42	O	A3	58	I	DI2
11	—	VDD	27	O	CPC	43	O	A4	59	I	DI1
12	I	IREF	28	I	HC	44	O	A5	60	I	DI0
13	I	VREF	29	—	GND	45	O	A6	61	I/O	DO3
14	O	Y	30	I	IREFVC	46	O	A7	62	I/O	DO2
15	I	COMP	31	—	VDD	47	O	A8	63	I/O	DO1
16	I	VIB	32	O	CLAMP	48	O	CAS	64	I/O	DO0

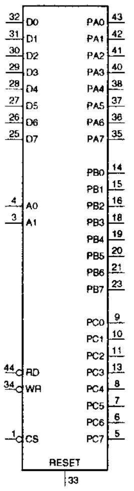

DO0 IN/OUT
DO1 IN/OUT
DO2 IN/OUT
DO3 IN/OUT
DI0 IN
DI1 IN
DI2 IN
DI3 IN
LEV0 IN
LEV1 IN
VRT
Y IN
RY IN
BY IN
VRB
VREF IN
IREF IN
COMP IN
VIB IN
Y OUT
RY OUT
BY OUT
MULTIPLEXER
AD CONVERTER
VERTICAL FILTER
STORE BUFFER MEMORY
READ BUFFER MEMORY
EXTERNAL MEMORY CONTROL/ ADDRESS GENERATOR
ELECTRIC CURRENT
FRAME COMPOSITE
DEMULTIPLEXER
FRAME COLOR LEVEL
DA CONVERTER
DA CONVERTER
DA CONVERTER
STORE CONTROL
READ CONTROL
I²C CONTROL
SAMPLING CLOCK GENERATOR
DISPLAY CLOCK GENERATOR
SC OUT
DT OUT
WE OUT
RAS OUT
CAS OUT
A8 OUT
A7 OUT
A6 OUT
A5 OUT
A4 OUT
A3 OUT
A2 OUT
A1 OUT
A0 OUT
SCL IN
SDA OUT
RST OUT
CLAMP OUT
YS OUT
HC IN
CVC IN
CPC OUT
CKCNT IN
IREF VC IN
HP IN
PVC IN
CPC OUT

MSM82C55A-2GS(OKI)FLAT PACKAGE

C-MOS PROGRAMMABLE PERIPHERAL INTERFACE

— TOP VIEW —

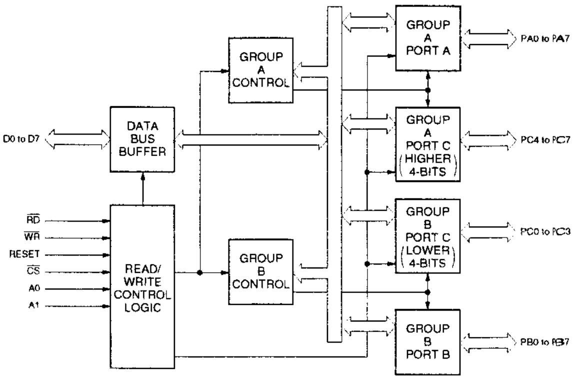

RD
PA0
PA1
PA2
PA3
PA4
PA5
PA6
PA7
WR
NC
CS
GND
A1
A0
PC7
PC6
PC5
PC4
PC0
PC1
PC2
RESET
D0
D1
D2
D3
D4
D5
D6
D7
VDD (+3 V to +6 V)
PB7
NC
VDD (+3 V to +6 V)
NC
PC3
PB0
PB1
PB2
PB3
PB4
PB5
PB6


D0
D1
D2
D3
D4
D5
D6
D7
A0
A1
RD
WR
CS
RESET
PA0
PA1
PA2
PA3
PA4
PA5
PA6
PA7
PB0
PB1
PB2
PB3
PB4
PB5
PB6
PB7
PC0
PC1
PC2
PC3
PC4
PC5
PC6
PC7

A1	A0	$\overline{CS}$	$\overline{WR}$	$\overline{RD}$	OPERATION
0	0	0	1	0	PORT A → DATA BUS
0	1	0	1	0	PORT B → DATA BUS
1	0	0	1	0	PORT C → DATA BUS
1	1	0	1	0	NO OPERATION
0	0	0	0	1	DATA BUS → PORT A
0	1	0	0	1	DATA BUS → PORT B
1	0	0	0	1	DATA BUS → PORT C
1	1	0	0	1	DATA BUS → CONTROL REGISTER
X	X	1	X	X	HIGH IMPEDANCE

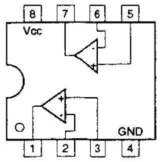
0 ; LOW LEVEL
1 ; HIGH LEVEL
X ; DON'T CARE

A0, A1 ; PORT SELECT ADDRESS
$\overline{CS}$; CHIP SELECT
D0 to 7 ; DATA BUS
PA0 to 7 ; PORT A IN/OUT
PB0 to 7 ; PORT B IN/OUT
PC0 to 7 ; PORT C IN/OUT
$\overline{RD}$; READ
$\overline{WR}$; WRITE


GROUP A PORT A
PA0 to PA7
GROUP A CONTROL
DATA BUS BUFFER
D0 to D7
GROUP A PORT C (HIGHER 4-BITS)
PC4 to PC7
GROUP B PORT C (LOWER 4-BITS)
PC0 to PC3
RD
WR
RESET
CS
A0
A1
READ/ WRITE CONTROL LOGIC
GROUP B CONTROL
GROUP B PORT B
PB0 to PB7

NJM3414AM(SNM)FLAT PACKAGE

DUAL OPERATIONAL AMPLIFIER
— TOP VIEW —

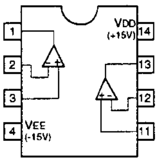

8
7
6
5
Vcc
GND
1
2
3
4

NOTE:

TYPE	Vcc
TA75358P	+12V
NJM3414M RC3414M	+15V
M5223FP	+36V

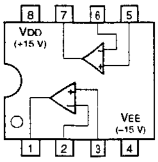
NJM4556AM-A(NEC)FLAT PACKAGE

OPERATIONAL AMPLIFIER
(WIDE BAND, DECOMPENSATED)
—TOP VIEW—


1
2
3
4
VEE
(-15V)
VDD
(+15V)
14
13
12
11

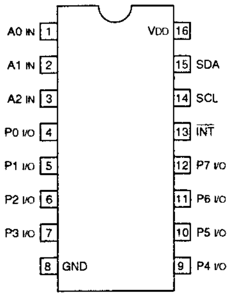
NJM4558V(JRC)FLAT PACKAGE
NJU7022M(JRC)FLAT PACKAGE

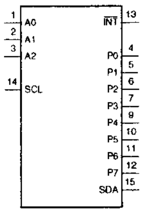
DUAL OPERATIONAL AMPLIFIER
— TOP VIEW —


8
7
6
5
VDD
(+15 V)
VEE
(−15 V)
1
2
3
4

PCF8574AT(PHILIPS)
PCF8574T(PHILIPS)

C-MOS REMOTE 8-BIT I/O EXPANDER
— TOP VIEW —

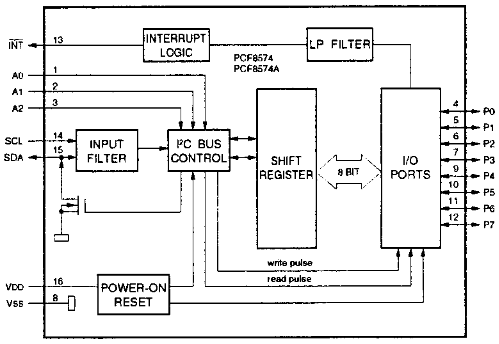

A0 IN 1
A1 IN 2
A2 IN 3
P0 I/O 4
P1 I/O 5
P2 I/O 6
P3 I/O 7
8 GND
VDD 16
15 SDA
14 SCL
13 $\overline{INT}$
12 P7 I/O
11 P6 I/O
10 P5 I/O
9 P4 I/O


1 A0
2 A1
3 A2
14 SCL
$\overline{INT}$ 13
P0 4
P1 5
P2 6
P3 7
P4 9
P5 10
P6 11
P7 12
SDA 15

INPUT
A0 - A2 ; ADDRESS INPUTS
SCL ; SYSTEM CLOCK LINE

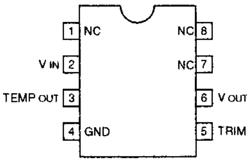
OUTPUT
$\overline{INT}$; INTERRUPT OUTPUT
SDA ; SERIAL DATA LINE

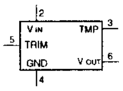
INPUT/OUTPUT
P0 - P7 ; 8-BITS QUASI-BIDIRECTIONAL I/O PORT


$\overline{INT}$
13
INTERRUPT LOGIC
LP FILTER
PCF8574
PCF8574A
A0 1
A1 2
A2 3
SCL 14
SDA 15
INPUT FILTER
I²C BUS CONTROL
SHIFT REGISTER
8 BIT
I/O PORTS
4 P0
5 P1
6 P2
7 P3
9 P4
10 P5
11 P6
12 P7
write pulse
read pulse
VDD 16
VSS 8
POWER-ON RESET

REF-03GS(PMI)

REFERENCE/TEMPERATURE TRANSDUCER
— TOP VIEW —

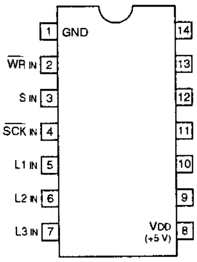

1 NC
V IN 2
TEMP OUT 3
4 GND
NC 8
NC 7
6 V OUT
5 TRIM

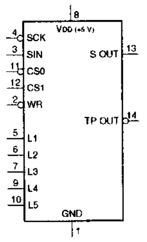

2
V IN
TMP 3
5 TRIM
GND
V OUT 6
4

V IN ; INPUT VOLTAGE (+4.5 V to +33 V)
TEMP OUT ; TEMPERATURE TRANSDUCER VOLTAGE OUTPUT
TRIM IN ; OUTPUT SIGNAL TRIMMING
V OUT ; OUTPUT VOLTAGE (+2.5 V)

RTC4553B(EPSON)

C-MOS REAL TIME CLOCK
—TOP VIEW—


1 GND
WR IN 2
S IN 3
SCK IN 4
L1 IN 5
L2 IN 6
L3 IN 7
14 TP OUT
13 S OUT
12 CS1 IN
11 CS0 IN
10 L5 IN
9 L4 IN
VDD (+5 V) 8

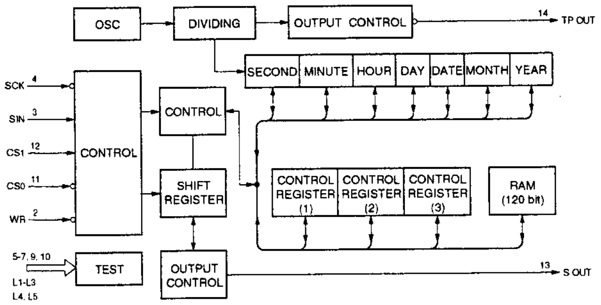

8
VDD (+5 V)
4 SCK
3 SIN
11 CS0
12 CS1
2 WR
S OUT 13
TP OUT 14
5 L1
6 L2
7 L3
9 L4
10 L5
GND
1

INPUT

CS0	; CHIP SELECT (L: ACCESS ENABLE, H: SOUT HIGH Z)
CS1	; POWER DOWN DETECTION
L1-L5	; TEST IN
SCK	; SERIAL SYNC SIGNAL
SIN	; SERIAL ADDRESS/DATA
WR	; WRITING SELECT (L: WRITING, H: READING)

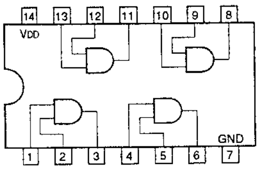
OUTPUT

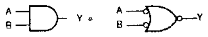
SOUT	; SERIAL ADDRESS/DATA
TPOUT	; REFERENCE SIGNAL


OSC
DIVIDING
OUTPUT CONTROL
14 TP OUT
SECOND
MINUTE
HOUR
DAY
DATE
MONTH
YEAR
SCK 4
SIN 3
CS1 12
CS0 11
WR 2
CONTROL
CONTROL
SHIFT REGISTER
CONTROL REGISTER (1)
CONTROL REGISTER (2)
CONTROL REGISTER (3)
RAM (120 bit)
5-7, 9, 10
L1-L3
L4, L5
TEST
OUTPUT CONTROL
13 S OUT

SN74HC08ANS(TI)FLAT PACKAGE
SN74HC08APW(TI)FLAT PACKAGE
TC74VHC08FS(EL)(TOSHIBA)FLAT PACKAGE(SMALL)

C-MOS QUAD 2-INPUT AND GATES
—TOP VIEW—


14
13
12
11
10
9
8
VDD
GND
1
2
3
4
5
6
7



$Y = A \cdot B = \overline{\overline{A} + \overline{B}}$

A	B	Y
0	0	0
0	1	0
1	0	0
1	1	1

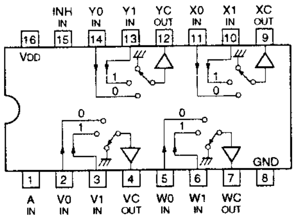
0 : LOW LEVEL
1 : HIGH LEVEL

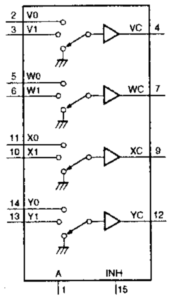
NOTE:

TYPE	VDD
TC74AC08 TYPE MC74ACT08M	+2 to +5.5V
TC40H	+2 to +8V
OTHER TYPES	+2 to +6V

SN74HC157APW(TI)FLAT PACKAGE
TC74VHC157FS(TOSHIBA)FLAT PACKAGE(SMALL)

C-MOS QUAD 2-LINE-TO-1-LINE DATA SELECTOR/ DEMULTIPLEXER
—TOP VIEW—


INH IN
Y0 IN
Y1 IN
YC OUT
X0 IN
X1 IN
XC OUT
16
15
14
13
12
11
10
9
VDD
GND
1
2
3
4
5
6
7
8
A IN
V0 IN
V1 IN
VC OUT
W0 IN
W1 IN
WC OUT


2 V0
3 V1
VC 4
5 W0
6 W1
WC 7
11 X0
10 X1
XC 9
14 Y0
13 Y1
YC 12
A
INH
1
15

NOTE:

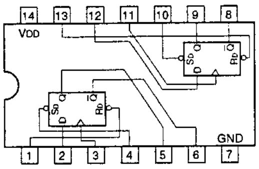
TYPE	VDD
74ACT/74FCT	+5V
TC74AC157P TC74AC157	+2 to +5.5V
TC40H	+2 to +8V
OTHER TYPES	+2 to +6V

CONT.IN		ON CHANNEL
INH	A	
0	0	0
0	1	1
1	X	GND

0 ; LOW LEVEL
1 ; HIGH LEVEL
X ; DON'T CARE

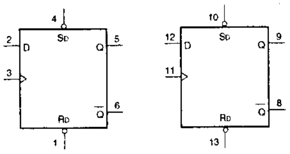
SN74HC74ANS(TI)FLAT PACKAGE
TC74VHC74F(TOSHIBA)FLAT PACKAGE
TC74VHC74FS(EL)(TOSHIBA)FLAT PACKAGE(SMALL)

C-MOS DUAL D-TYPE FLIP-FLOPS WITH DIRECT SET/RESET
—TOP VIEW—


14
13
12
11
10
9
8
VDD
GND
1
2
3
4
5
6
7

INPUTS				OUTPUTS	
$\overline{S_D}$	$\overline{R_D}$	CK	D	Qn+1	$\overline{Qn+1}$
0	1	X	X	1	0
1	0	X	X	0	1
0	0	X	X	1	1
1	1	↑	1	1	0
1	1	↑	0	0	1
1	1	0	X	Qn	$\overline{Qn}$

0 ; LOW LEVEL
1 ; HIGH LEVEL
X ; DON'T CARE

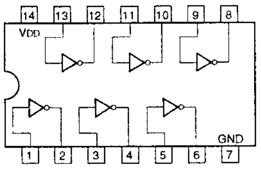

4
2 D
3
SD
Q 5
RD
Q 6
1
10
12 D
11
SD
Q 9
RD
Q 8
13

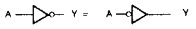
NOTE:

TYPE	VDD
HCT/ACT	+5V
TC74AC/VHC	+2 to +5.5V
OTHERS	+2 to +6V

SN74HCT04APW(TOSHIBA)FLAT PACKAGE
TC74VHC04FS(EL)(TOSHIBA)FLAT PACKAGE(SMALL)

C-MOS HEX INVERTERS
—TOP VIEW—


14
13
12
11
10
9
8
VDD
GND
1
2
3
4
5
6
7



$Y = \overline{A}$

A	Y
0	1
1	0

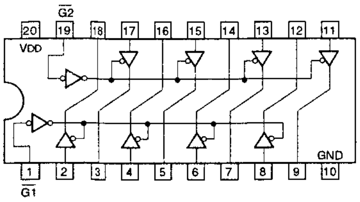
0 ; LOW LEVEL
1 ; HIGH LEVEL

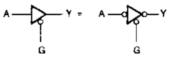
NOTE:

TYPE	VDD
74HCT04 TYPE	+5V
TC74AC04 TYPE TC74VHC04 TYPE	+2 to +5.5V
74ACT04 TYPE	+4.5 to +5.5V
OTHER TYPES	+2 to +6V

SN74HCT244APW-E05(TI)FLAT PACKAGE
TC74VHC244FS(EL)(TOSHIBA)FLAT PACKAGE(SMALL)

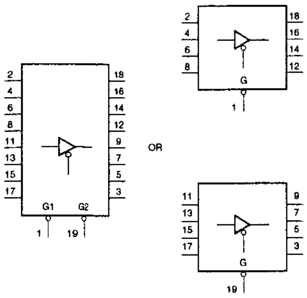
C-MOS BUS BUFFER WITH 3-STATE OUTPUTS
—TOP VIEW—


G2
20
19
18
17
16
15
14
13
12
11
VDD
GND
1
2
3
4
5
6
7
8
9
10
G1



G	A	Y
0	0	0
0	1	1
X	X	HI-Z

0 : LOW LEVEL
1 : HIGH LEVEL
X : DON'T CARE
HI-Z : HIGH IMPEDANCE

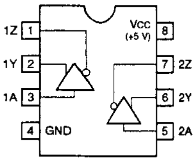

2
4
6
8
11
13
15
17
18
16
14
12
9
7
5
3
G1
G2
1
19
OR
2
4
6
8
18
16
14
12
G
1
11
13
15
17
9
7
5
3
G
19

NOTE:

TYPE	VDD
AC HC 40H	+2 to +6V
ACT BCT FCT HCT	+5V
TC74AC244 TYPE TC74VHC244	+2 to +5.5V

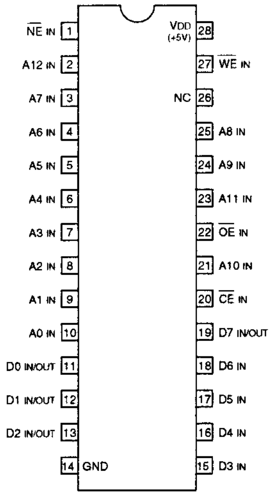
SN75158PS(TI)

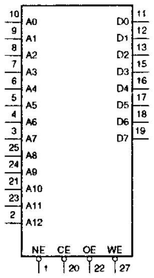
DUAL DIFFERENTIAL LINE DRIVE
— TOP VIEW —


1Z
1
1Y
2
1A
3
4
GND
Vcc
(+5 V)
8
7
2Z
6
2Y
5
2A

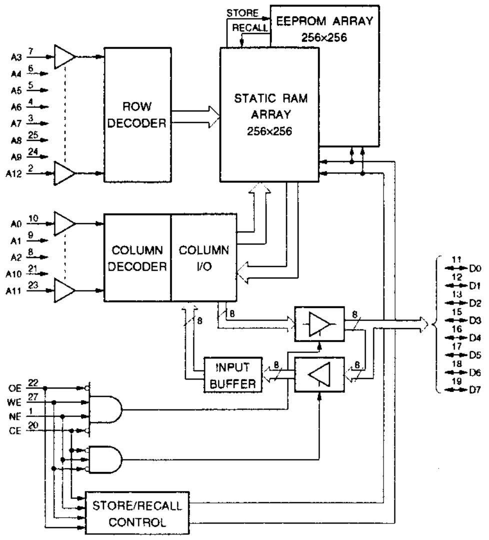
STK10C68-5S35(SIMTEK)FLAT PACKAGE

C-MOS 8K×8-BIT NONVOLATILE STATIC RAM
— TOP VIEW —


NE IN 1
A12 IN 2
A7 IN 3
A6 IN 4
A5 IN 5
A4 IN 6
A3 IN 7
A2 IN 8
A1 IN 9
A0 IN 10
D0 IN/OUT 11
D1 IN/OUT 12
D2 IN/OUT 13
14 GND
VDD (+5V) 28
27 WE IN
NC 26
25 A8 IN
24 A9 IN
23 A11 IN
22 OE IN
21 A10 IN
20 CE IN
19 D7 IN/OUT
18 D6 IN
17 D5 IN
16 D4 IN
15 D3 IN

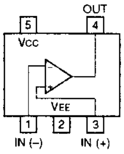

10 A0
9 A1
8 A2
7 A3
6 A4
5 A5
4 A6
3 A7
25 A8
24 A9
21 A10
23 A11
2 A12
D0 11
D1 12
D2 13
D3 15
D4 16
D5 17
D6 18
D7 19
NE
CE
OE
WE
1
20
22
27

A0 - A12 ; ADDRESS INPUTS
CE ; CHIP ENABLE INPUT
D0 - D7 ; DATA INPUTS/OUTPUTS
NE ; NONVOLATILE ENABLE INPUT
OE ; OUTPUT ENABLE INPUT
WE ; WRITE ENABLE INPUT


STORE
RECALL
EEPROM ARRAY
256×256
A3 7
A4 6
A5 5
A6 4
A7 3
A8 25
A9 24
A12 2
ROW
DECODER
STATIC RAM
ARRAY
256×256
A0 10
A1 9
A2 8
A10 21
A11 23
COLUMN
DECODER
COLUMN
I/O
8
8
8
8
INPUT
BUFFER
8
8
11 D0
12 D1
13 D2
15 D3
16 D4
17 D5
18 D6
19 D7
OE 22
WE 27
NE 1
CE 20
STORE/RECALL
CONTROL

TA75S393F(TOSHIBA)

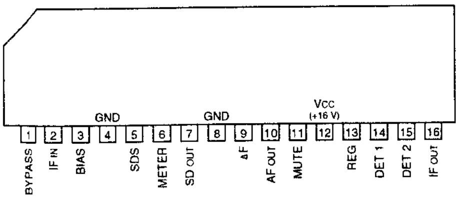
SINGLE COMPARATOR
— TOP VIEW —

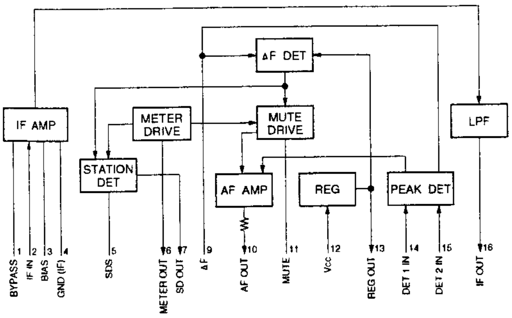

OUT
5
4
Vcc
VEE
1
2
3
IN (–)
IN (+)

Vcc : +1 V to +18 V or +2 V to +36 V
VEE : –1 V to –18 V

TA8129Z(TOSHIBA)

FM IF SYSTEM (DIFFERENTIAL PEAK DETECT)
— SIDE VIEW —

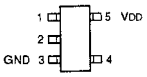

GND
GND
Vcc
(+16 V)
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
BYPASS
IF IN
BIAS
SDS
METER
SD OUT
ΔF
AF OUT
MUTE
REG
DET 1
DET 2
IF OUT

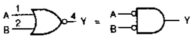

ΔF DET
IF AMP
METER DRIVE
MUTE DRIVE
LPF
STATION DET
AF AMP
REG
PEAK DET
1
2
3
4
5
6
7
9
10
11
12
13
14
15
16
BYPASS
IF IN
BIAS
GND (IF)
SDS
METER OUT
SD OUT
ΔF
AF OUT
MUTE
Vcc
REG OUT
DET 1 IN
DET 2 IN
IF OUT

TC4S01F(TOSHIBA)CHIP PACKAGE
TC7S02FU(TOSHIBA)CHIP PACKAGE
TC7SH02FU(TOSHIBA)CHIP PACKAGE

C-MOS 2-INPUT NOR GATE

—TOP VIEW—


1
2
GND 3
5 VDD
4



$Y = \overline{A + B} = \bar{A} \cdot B$

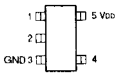
A	B	Y
0	0	1
0	1	0
1	0	0
1	1	0

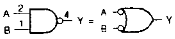
0 ; LOW LEVEL
1 ; HIGH LEVEL

TYPE	VDD
4S01F	+3 to +18V
7S02F	+2 to +6V
7S02FU	
7SH02FU	

TC4S11F(TOSHIBA)CHIP PACKAGE
TC7S00FU(TOSHIBA)CHIP PACKAGE

C-MOS 2-INPUT NAND GATE
— TOP VIEW —


1
2
GND 3
5 VDD
4



$Y = \overline{A \cdot B} = \bar{A} + \bar{B}$

A	B	Y
0	0	1
0	1	1
1	0	1
1	1	0

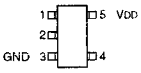
0 : LOW LEVEL
1 : HIGH LEVEL

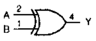
TYPE	VDD
7S00F 7S00FU	+2 to +6 V
4S11F 4SU11F	+3 to +18 V
7SH00FU	+2 to +5.5 V

TC4S30F(TOSHIBA)CHIP PACKAGE
TC7S86FU(TOSHIBA)CHIP PACKAGE

C-MOS 2-INPUT EXCLUSIVE OR GATE

—TOP VIEW—


1
2
GND 3
5 VDD
4



$Y = A \cdot B + A \cdot \bar{B}$

A	B	Y
0	0	0
0	1	1
1	0	1
1	1	0

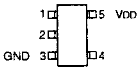
0 : LOW LEVEL
1 : HIGH LEVEL

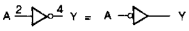
TYPE	VDD
7S86FU 7S86F	+2 to +6V
4S30F	+3 to +18V

TC4S69F(TOSHIBA)CHIP PACKAGE
TC4SU69F(TOSHIBA)CHIP PACKAGE
TC7S04FU(TOSHIBA)CHIP PACKAGE
TC7SH04FU(TOSHIBA)CHIP PACKAGE

C-MOS INVERTER

—TOP VIEW—


1
2
GND 3
5 VDD
4



$Y = \bar{A}$

A	Y
0	1
1	0

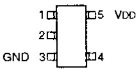
TYPE	VDD
7S04F 7SU04F 7SU04FU	+2 to +6V
4S69F 4SU69F	+3 to +18V
7SH04FU	+2 to +5.5V

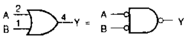
0 ; LOW LEVEL
1 ; HIGH LEVEL

TC4S71F(TOSHIBA)CHIP PACKAGE
TC7S32FU(TOSHIBA)CHIP PACKAGE
TC7SH32FU(TOSHIBA)CHIP PACKAGE

C-MOS 2-INPUT OR GATE

—TOP VIEW—


1
2
GND 3
5 VDD
4



$Y = A + B = \overline{A \cdot B}$

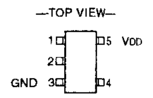
A	B	Y
0	0	0
0	1	1
1	0	1
1	1	1

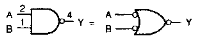
0 ; LOW LEVEL
1 ; HIGH LEVEL

TYPE	VDD
7S32F 7S32FU	+2 to +6V
4S71F	+3 to +18V
7SH32FU	−2 to +5.5V

TC4S81F(TOSHIBA)CHIP PACKAGE
TC7S08FU(TOSHIBA)CHIP PACKAGE
TC7SH08FU(TOSHIBA)CHIP PACKAGE

C-MOS 2-INPUT AND GATE


—TOP VIEW—
1
2
GND 3
5 VDD
4



$Y = A \cdot B = \overline{\overline{A} + \overline{B}}$

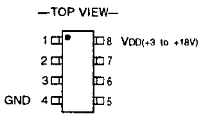
A	B	Y
0	0	0
0	1	0
1	0	0
1	1	1

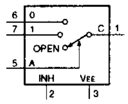
0 ; LOW LEVEL
1 ; HIGH LEVEL

TYPE	VDD
7S08F 7S08FU	+2 to +6V
4S81F 14S81F	+3 to +18V
7SH08FU	-2 to +5.5V

TC4W53FU(TOSHIBA)CHIP PACKAGE

C-MOS 2-CHANNEL MULTIPLEXER / DEMULTIPLEXER


—TOP VIEW—
1
2
3
GND 4
8 VDD(+3 to +18V)
7
6
5

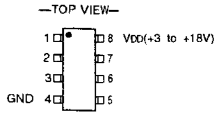

6
0
7
1
OPEN
5
A
C
1
INH
VEE
2
3

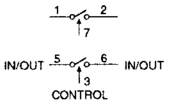
0 ; LOW LEVEL
1 ; HIGH LEVEL
X ; DON'T CARE

CONT.INPUT		ON CHANNEL
INH	A	
0	0	0
0	1	1
1	X	OPEN

TC4W66FU(TOSHIBA)CHIP PACKAGE

C-MOS DUAL BILATERAL SWITCH


—TOP VIEW—
1
2
3
GND 4
8 VDD(+3 to +18V)
7
6
5

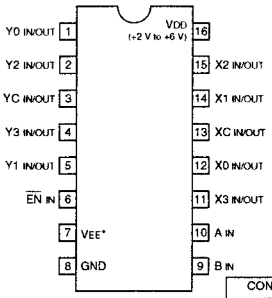

1
2
7
IN/OUT
5
6
IN/OUT
3
CONTROL

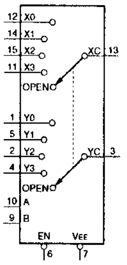
CONTROL	SWITCH
0	OFF
1	ON

0 ; LOW LEVEL
1 ; HIGH LEVEL

TC74HC4052AFS(EL)(TOSHIBA)FLAT PACKAGE

C-MOS DUAL 4-CHANNEL ANALOG MULTIPLEXER/DEMULTIPLEXER
— TOP VIEW —


Y0 IN/OUT 1
Y2 IN/OUT 2
YC IN/OUT 3
Y3 IN/OUT 4
Y1 IN/OUT 5
EN IN 6
7 VEE*
8 GND
VDD (+2 V to +6 V) 16
15 X2 IN/OUT
14 X1 IN/OUT
13 XC IN/OUT
12 X0 IN/OUT
11 X3 IN/OUT
10 A IN
9 B IN


12 X0
14 X1
15 X2
11 X3
XC 13
OPEN
1 Y0
5 Y1
2 Y2
4 Y3
YC 3
OPEN
10 A
9 B
EN
VEE
6
7

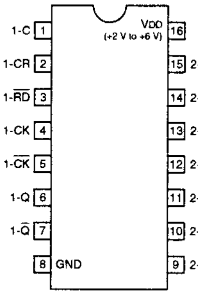
VEE* ; VDD – VEE = +3 V to +12 V

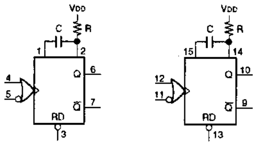
0 ; LOW LEVEL
1 ; HIGH LEVEL
X ; DON'T CARE

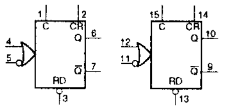
CONTROL INPUTS			"ON" CHANNEL
EN	B	A	
0	0	0	0
0	0	1	1
0	1	0	2
0	1	1	3
1	X	X	OPEN

TC74HC4538AFS(TOSHIBA)FLAT PACKAGE

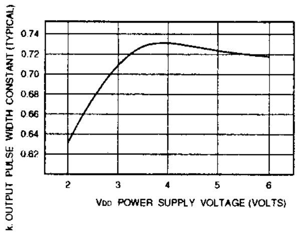
C-MOS DUAL RETRIGGERABLE/NON-RETRIGGERABLE MONOSTABLE MULTIVIBRATOR
— TOP VIEW —


1-C 1
1-CR 2
1-RD 3
1-CK 4
1-CK 5
1-Q 6
1-Q 7
8 GND
VDD (+2 V to +6 V) 16
15 2-C
14 2-CR
13 2-RD
12 2-CK
11 2-CK
10 2-Q
9 2-Q

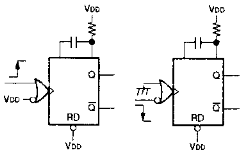

VDD
C
R
1
2
4
5
Q 6
Q 7
RD
3
VDD
C
R
15
14
12
11
Q 10
Q 9
RD
13


1
2
C
CR
Q 6
4
5
Q 7
RD
3
15
14
C
CR
Q 10
12
11
Q 9
RD
13

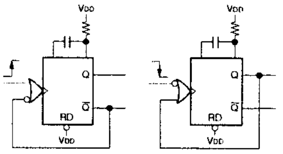
OUTPUT PULSE WIDTH = k · C · R



RETRIGGERABLE M. M. V


VDD
Q
VDD
Q
RD
VDD
VDD
Q
Q
RD
VDD

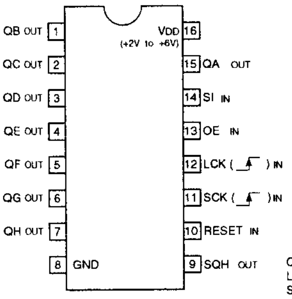
NON-RETRIGGERABLE M. M. V

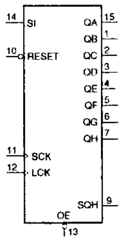

VDD
Q
Q
RD
VDD
VDD
Q
Q
RD
VDD

TC74HC595AF(TOSHIBA)FLAT PACKAGE

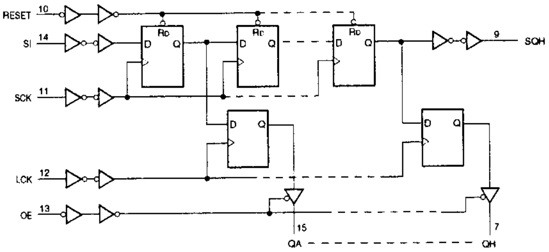
C-MOS 8-BIT SERIAL-INPUT/SERIAL- OR PARALLEL-OUTPUT SHIFT REGISTER WITH LATCHED 3-STATE OUTPUT

—TOP VIEW—


QB OUT 1
QC OUT 2
QD OUT 3
QE OUT 4
QF OUT 5
QG OUT 6
QH OUT 7
8 GND
VDD 16 (+2V to +6V)
15 QA OUT
14 SI IN
13 OE IN
12 LCK ( ) IN
11 SCK ( ) IN
10 RESET IN
9 SQH OUT


14 SI
10 RESET
11 SCK
12 LCK
QA 15
QB 1
QC 2
QD 3
QE 4
QF 5
QG 6
QH 7
SQH 9
OE
13

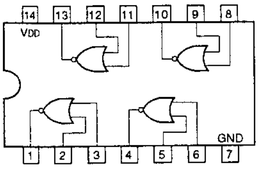
OE : OUTPUT ENABLE INPUT
LCK : LATCH CLOCK INPUT
SCK : SHIFT CLOCK INPUT
RESET : SHIFT-REGISTER RESET INPUT
SI : SERIAL IN
QA-QH : PARALLEL OUTPUT
SQH : SERIAL OUT

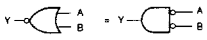

RESET 10
SI 14
SCK 11
LCK 12
OE 13
RD
D Q
9
SQH
15
QA
7
QH

TC74VHC02F(TOSHIBA)FLAT PACKAGE

C-MOS QUAD 2-INPUT NOR GATES

—TOP VIEW—


14
13
12
11
10
9
8
VDD
GND
1
2
3
4
5
6
7



$Y = \overline{A + B} = \overline{A} \bullet \overline{B}$

A	B	Y
0	0	1
0	1	0
1	0	0
1	1	0

0 ; LOW LEVEL
1 ; HIGH LEVEL

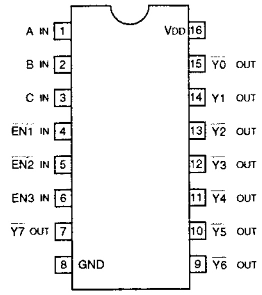
NOTE:

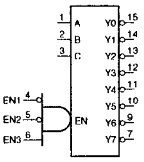
TYPE	VDD
HC	+2 to +6V
AC/VHC	+2 to +5.5V
HCT/ACT	+5V

TC74VHC138FS(EL)(TOSHIBA)FLAT PACKAGE(SMALL)

C-MOS 3-TO-8 LINE DECODER / DEMULTIPLEXER

—TOP VIEW—


A IN 1
B IN 2
C IN 3
EN1 IN 4
EN2 IN 5
EN3 IN 6
Y7 OUT 7
8 GND
VDD 16
15 Y0 OUT
14 Y1 OUT
13 Y2 OUT
12 Y3 OUT
11 Y4 OUT
10 Y5 OUT
9 Y6 OUT


1 A
2 B
3 C
EN1 4
EN2 5
EN3 6
EN
Y0 15
Y1 14
Y2 13
Y3 12
Y4 11
Y5 10
Y6 9
Y7 7

INPUTS				OUTPUTS							
EN	C	B	A	Y7	Y6	Y5	Y4	Y3	Y2	Y1	Y0
0	X	X	X	1	1	1	1	1	1	1	1
1	0	0	0	1	1	1	1	1	1	1	0
1	0	0	1	1	1	1	1	1	1	0	1
1	0	1	0	1	1	1	1	1	0	1	1
1	0	1	1	1	1	1	1	0	1	1	1
1	1	0	0	1	1	1	0	1	1	1	1
1	1	0	1	1	1	0	1	1	1	1	1
1	1	1	0	1	0	1	1	1	1	1	1
1	1	1	1	0	1	1	1	1	1	1	1

$EN = \overline{EN1} \bullet \overline{EN2} \bullet EN3$

0 ; LOW LEVEL
1 ; HIGH LEVEL
X ; DON'T CARE

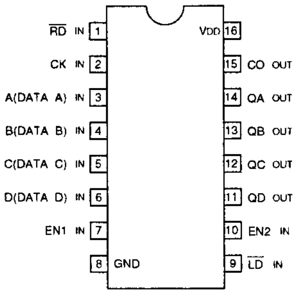
NOTE:

TYPE	VDD
74HCT138 TYPE	+5V
74ACT138 TYPE	+4.5 to +5.5V
TC74AC138 TYPE TC74VHC138	+2 to +5.5V
OTHER TYPES	+2 to +6V

TC74VHC163F(TOSHIBA)FLAT PACKAGE

C-MOS PRESETTABLE SYNCHRONOUS 4-BIT BINARY COUNTER

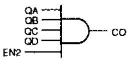
—TOP VIEW—


RD IN 1
CK IN 2
A(DATA A) IN 3
B(DATA B) IN 4
C(DATA C) IN 5
D(DATA D) IN 6
EN1 IN 7
8 GND
VDD 16
15 CO OUT
14 QA OUT
13 QB OUT
12 QC OUT
11 QD OUT
10 EN2 IN
9 LD IN

MODE SELECTION

CONTROL INPUTS				MODE
RD	LD	EN1	EN2	
0	X	X	X	RESET (SYNCHRONOUS)
1	0	X	X	PRESET (SYNCHRONOUS)
1	1	0	X	NO COUNT
1	1	X	0	NO COUNT
1	1	1	1	COUNT

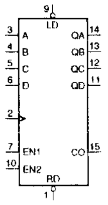
CARRY OUTPUT "CO"


QA
QB
QC
QD
EN2
CO

CO IS HIGH WHEN EN2 INPUT IS HIGH AND COUNT IS "15".

NOTE:

TYPE	VDD
HC	+2 to +6V
AC/VHC	+2 to +5.5V
HCT/ACT/FCT	+5V

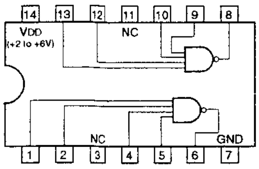

9
LD
3 A
4 B
5 C
6 D
2
7 EN1
10 EN2
QA 14
QB 13
QC 12
QD 11
CO 15
RD
1

COUNT SEQUENCE

COUNT	OUTPUTS			
	QD	QC	QB	QA
0	0	0	0	0
1	0	0	0	1
2	0	0	1	0
3	0	0	1	1
4	0	1	0	0
5	0	1	0	1
6	0	1	1	0
7	0	1	1	1
8	1	0	0	0
9	1	0	0	1
10	1	0	1	0
11	1	0	1	1
12	1	1	0	0
13	1	1	0	1
14	1	1	1	0
15	1	1	1	1

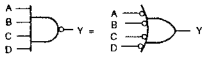
TC74VHC20F(TOSHIBA)FLAT PACKAGE

C-MOS 4-INPUT POSITIVE-NAND GATE
—TOP VIEW—


14
13
12
11
10
9
8
VDD
(+2 to +6V)
NC
NC
GND
1
2
3
4
5
6
7

NOTE:

TYPE	VDD
AC/VHC	+2 to +5.5V
HC	+2 to +6V


A
B
C
D
Y =
A
B
C
D
Y

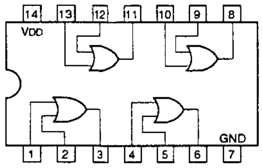
$Y = \overline{A \bullet B \bullet C \bullet D} = \bar{A} + \bar{B} + \bar{C} + \bar{D}$

A	B	C	D	Y
0	0	0	0	1
0	0	0	1	1
0	0	1	0	1
0	0	1	1	1
0	1	0	0	1
⋮	⋮	⋮	⋮	⋮
1	1	0	1	1
1	1	1	0	1
1	1	1	1	0

0 ; LOW LEVEL
1 ; HIGH LEVEL

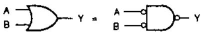
TC74VHC32FS(EL)(TOSHIBA)FLAT PACKAGE(SMALL)

C-MOS QUAD 2-INPUT OR GATES
—TOP VIEW—


14
13
12
11
10
9
8
VDD
GND
1
2
3
4
5
6
7

NOTE:

TYPE	VDD
AC/VHC	+2 to +5.5V
HC	+2 to +6V



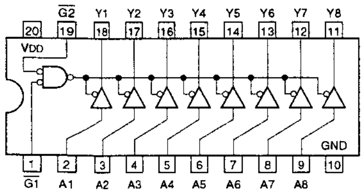
$Y = A + B = \overline{\bar{A} \bullet \bar{B}}$

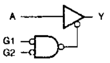
A	B	Y
0	0	0
0	1	1
1	0	1
1	1	1

0 ; LOW LEVEL
1 ; HIGH LEVEL

TC74VHC541FS(EL)(TOSHIBA)FLAT PACKAGE(SMALL)

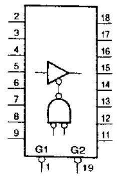
C-MOS BUFFERS AND LINE DRIVERS WITH 3-STATE OUTPUTS
— TOP VIEW —


$\overline{G2}$
Y1
Y2
Y3
Y4
Y5
Y6
Y7
Y8
20
19
18
17
16
15
14
13
12
11
VDD
GND
1
2
3
4
5
6
7
8
9
10
$\overline{G1}$
A1
A2
A3
A4
A5
A6
A7
A8



G1	G2	A	Y
0	0	0	0
0	0	1	1
1	X	X	HI-Z
X	1	X	Hi-Z

0 ; LOW LEVEL
1 ; HIGH LEVEL
X ; DON'T CARE
HI-Z ; HIGH IMPEDANCE

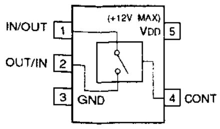

2
3
4
5
6
7
8
9
18
17
16
15
14
13
12
11
G1
G2
1
19

NOTE :

TYPE	VDD
AC/VHC	+2 V to +5.5 V
HC	+2 V to +6 V
ABT/ACT/BCT/HCT/VHCT	+5 V

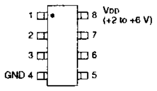
TC7S66FU(TOSHIBA)

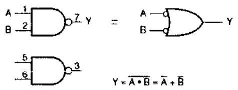
C-MOS ANALOG SWITCH
—TOP VIEW—


IN/OUT
1
OUT/IN
2
3
GND
(+12V MAX)
VDD
5
4
CONT

TC7W00FU(TOSHIBA)CHIP PACKAGE

C-MOS 2-INPUT NAND GATE
- TOP VIEW -


1
2
3
GND 4
8
VDD
(+2 to +6 V)
7
6
5


A
B
1
2
7
Y
=
A
B
Y
5
6
3

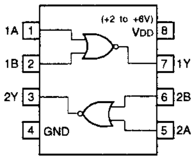
$Y = \overline{A \bullet B} = \bar{A} + \bar{B}$

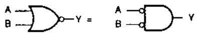
A	B	Y
0	0	1
0	1	1
1	0	1
1	1	0

0; LOW LEVEL
1; HIGH LEVEL

TC7W02F(TOSHIBA)FLAT PACKAGE

C-MOS DUAL 2-INPUT NOR GATE
—TOP VIEW—


1A
1
1B
2
2Y
3
4
GND
(+2 to +6V)
VDD
8
7
1Y
6
2B
5
2A



$Y = \overline{A + B} = \bar{A} \bullet \bar{B}$

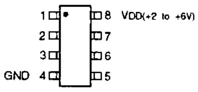
A	B	Y
0	0	1
0	1	0
1	0	0
1	1	0

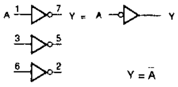
0 ; LOW LEVEL
1 ; HIGH LEVEL

TC7W04FU(TOSHIBA)CHIP PACKAGE

C-MOS HEX INVERTERS

—TOP VIEW—


1
2
3
GND 4
8
VDD(+2 to +6V)
7
6
5


A
1
7
Y =
A
Y
3
5
6
2

$Y = \bar{A}$

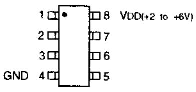
A	Y
0	1
1	0

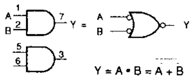
0 ; LOW LEVEL
1 ; HIGH LEVEL

TC7W08FU(TOSHIBA)CHIP PACKAGE

C-MOS 2-INPUT AND GATE

—TOP VIEW—


1
2
3
GND 4
8
VDD(+2 to +6V)
7
6
5


A
B
1
2
7
Y =
A
B
Y
5
6
3

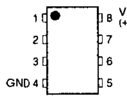
$Y = A \bullet B = \overline{\bar{A} + \bar{B}}$

A	B	Y
0	0	0
0	1	0
1	0	0
1	1	1

0 ; LOW LEVEL
1 ; HIGH LEVEL

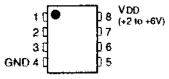
TC7W139FU(TOSHIBA)CHIP PACKAGE

C-MOS 2 to 4 LINE DECODER WITH ENABLE
—TOP VIEW—

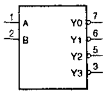

1
2
3
GND 4
8 VDD (+2 to +6V)
7
6
5

F TYPE

(SCALE 5/1)


1
2
3
GND 4
8 VDD (+2 to +6V)
7
6
5

FU TYPE

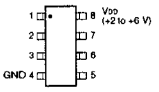

1 A
2 B
Y0 7
Y1 6
Y2 5
Y3 3

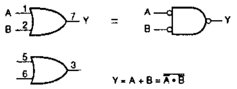
INPUTS		OUTPUTS				SELECTED OUTPUT
SELECT						
B	A	$\overline{Y0}$	$\overline{Y1}$	$\overline{Y2}$	$\overline{Y3}$	
0	0	0	1	1	1	$\overline{Y0}$
0	1	1	0	1	1	$\overline{Y1}$
1	0	1	1	0	1	$\overline{Y2}$
1	1	1	1	1	0	$\overline{Y3}$

0 ; LOW LEVL
1 ; HIGH LEVEL

TC7W32FU(TOSHIBA)CHIP PACKAGE

C-MOS DUAL 2-INPUT OR GATE
—TOP VIEW—


1
2
3
GND 4
8 VDD (+2 to +6 V)
7
6
5


A 1
B 2
7 Y
=
A
B
Y
5
6
3

$Y = A + B = \overline{\overline{A} \cdot \overline{B}}$

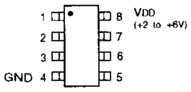
A	B	Y
0	0	0
0	1	1
1	0	1
1	1	1

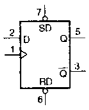
0: LOW LEVEL
1: HIGH LEVEL

TC7W74FU(TOSHIBA)CHIP PACKAGE

C-MOS D-TYPE FLIP-FLOPS WITH DIRECT SET / RESET
—TOP VIEW—

—TOP VIEW—


1
2
3
GND 4
8 VDD (+2 to +6V)
7
6
5

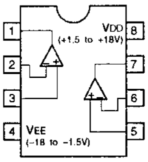

7
SD
2 D
1
Q 5
Q̄ 3
RD
6

INPUTS				OUTPUTS	
$\overline{SD}$	$\overline{RD}$	CK	D	Qn+1	$\overline{Qn+1}$
0	1	X	X	1	0
1	0	X	X	0	1
0	0	X	X	1	1
1	1	↑	1	1	0
1	1	↑	0	0	1
1	1	↓	X	Qn	$\overline{Qn}$

0 ; LOW LEVEL
1 ; HIGH LEVEL
X ; DON'T CARE

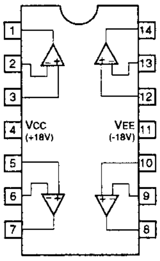
TL062CPW(TI)FLAT PACKAGE
TL082M(TI)

OPERATIONAL AMPLIFIER
(J FET INPUT)
—TOP VIEW—


1
2
3
4
VDD (+1.5 to +18V)
8
7
6
5
VEE (-18 to -1.5V)

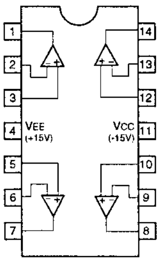
TL064CPW(TI)

OPERATIONAL AMPLIFIER
(J FET INPUT)
—TOP VIEW—


1
2
3
4
5
6
7
14
13
12
11
10
9
8
VCC (+18V)
VEE (-18V)

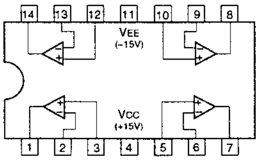
TL074CPW(TI)

OPERATIONAL AMPLIFIER
(LOW-NOISE, JFET-INPUT)
—TOP VIEW—


1
2
3
4
5
6
7
14
13
12
11
10
9
8
VEE (+15V)
VCC (-15V)

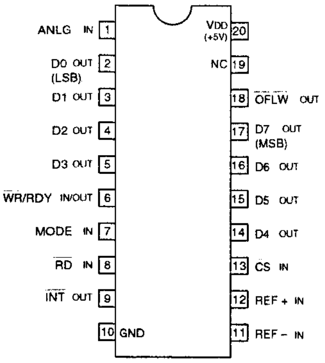
TL084CPW(TI)

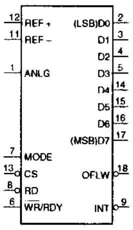
OPERATIONAL AMPLIFIER
(J FET INPUT)
—TOP VIEW—


14
13
12
11
10
9
8
VEE (-15V)
VCC (+15V)
1
2
3
4
5
6
7

TLC0820ACDW(TI)FLAT PACKAGE

C-MOS 8-BIT SEMIFLASH TYPE A / D CONVERTER
—TOP VIEW—

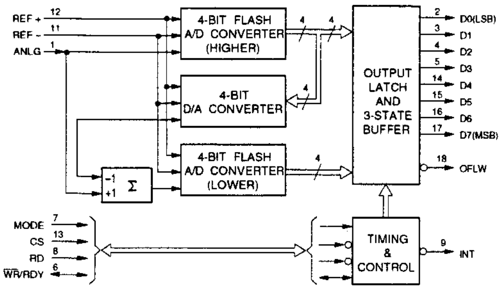

ANLG IN 1
D0 OUT (LSB) 2
D1 OUT 3
D2 OUT 4
D3 OUT 5
WR/RDY IN/OUT 6
MODE IN 7
RD IN 8
INT OUT 9
10 GND
VDD (+5V) 20
NC 19
18 OFLW OUT
17 D7 OUT (MSB)
16 D6 OUT
15 D5 OUT
14 D4 OUT
13 CS IN
12 REF + IN
11 REF − IN


12 REF +
11 REF −
1 ANLG
7 MODE
13 CS
8 RD
6 WR/RDY
(LSB)D0 2
D1 3
D2 4
D3 5
D4 14
D5 15
D6 16
(MSB)D7 17
OFLW 18
INT 9

INPUT
ANLG ; ANALOG SIGNAL
CS ; CHIP SELECT
MODE ; MODE
RD ; READ
REF+, REF− ; REFERENCE VOLTAGE +, −

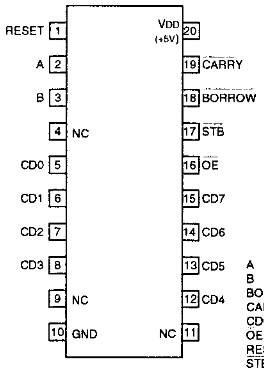
OUTPUT
D0-D7 ; DIGITAL SIGNAL
INT ; INTERRUPT
OFLW ; OVERFLOW

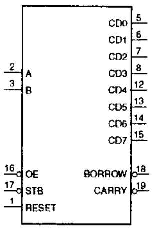
INPUT/OUTPUT
WR/RDY ; L : WRITE/H : READY


REF + 12
REF − 11
ANLG 1
4-BIT FLASH A/D CONVERTER (HIGHER)
4-BIT D/A CONVERTER
4-BIT FLASH A/D CONVERTER (LOWER)
−1
+1
Σ
4
4
4
4
OUTPUT LATCH AND 3-STATE BUFFER
2 D0(LSB)
3 D1
4 D2
5 D3
14 D4
15 D5
16 D6
17 D7(MSB)
18 OFLW
MODE 7
CS 13
RD 8
WR/RDY 6
TIMING & CONTROL
9 INT

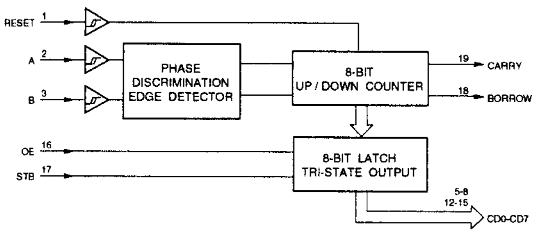
UPD4702G(NEC)

C-MOS INCREMENTAL ENCODER 8-BIT UP DOWN COUNTER
—TOP VIEW—


RESET 1
A 2
B 3
4 NC
CD0 5
CD1 6
CD2 7
CD3 8
9 NC
10 GND
VDD (+5V) 20
19 CARRY
18 BORROW
17 STB
16 OE
15 CD7
14 CD6
13 CD5
12 CD4
NC 11

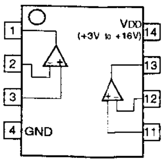

2 A
3 B
16 OE
17 STB
1 RESET
CD0 5
CD1 6
CD2 7
CD3 8
CD4 12
CD5 13
CD6 14
CD7 15
BORROW 18
CARRY 19

A ; INCREMENTAL SIGNAL (PHASE A) INPUT
B ; INCREMENTAL SIGNAL (PHASE B) INPUT
BORROW ; BORROW PULSE OUTPUT
CARRY ; CARRY PULSE OUTPUT
CD0-7 ; COUNT DATA OUTPUT
OE ; OUTPUT CONTROL SIGNAL INPUT
RESET ; COUNTER RESET INPUT
STB ; LATCH STROBE SIGNAL INPUT


RESET 1
A 2
B 3
PHASE DISCRIMINATION EDGE DETECTOR
8-BIT UP / DOWN COUNTER
19 CARRY
18 BORROW
OE 16
STB 17
8-BIT LATCH TRI-STATE OUTPUT
5-8 12-15
CD0-CD7

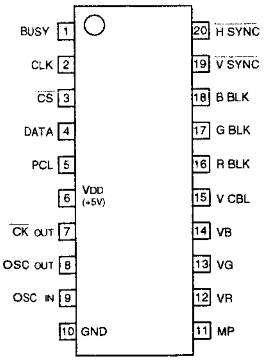
TLC272CP
TLC272CPW(TI)
TLC27L2CPS(TI)FLAT PACKAGE

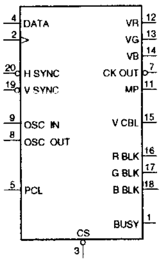
OPERATIONAL AMPLIFIER
—TOP VIEW—


1
2
3
4 GND
VDD (+3V to +16V) 14
13
12
11

UPD6453GT-610(NEC)FLAT PACKAGE

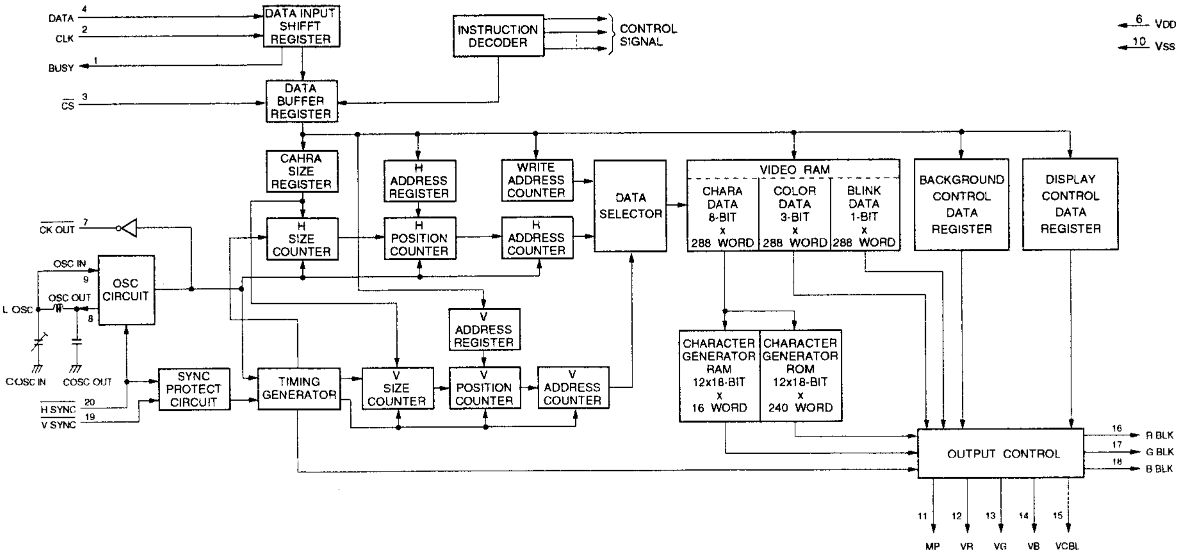
C-MOS ON-SCREEN CHARACTER DISPLAY
—TOP VIEW—


BUSY 1
CLK 2
CS 3
DATA 4
PCL 5
6 VDD (+5V)
CK OUT 7
OSC OUT 8
OSC IN 9
10 GND
20 H SYNC
19 V SYNC
18 B BLK
17 G BLK
16 R BLK
15 V CBL
14 VB
13 VG
12 VR
11 MP


4 DATA
2
20 H SYNC
19 V SYNC
9 OSC IN
8 OSC OUT
5 PCL
VR 12
VG 13
VB 14
CK OUT 7
MP 11
V CBL 15
R BLK 16
G BLK 17
B BLK 18
BUSY 1
CS 3

INPUT
CLK ; CLOCK
CS ; CHIP SELECT
DATA ; SERIAL DATA
H SYNC ; HORIZONTAL SYNC
OSC IN ; OSCILLATOR IN
PCL ; POWER ON CLEAR
V SYNC ; VERTICAL SYNC

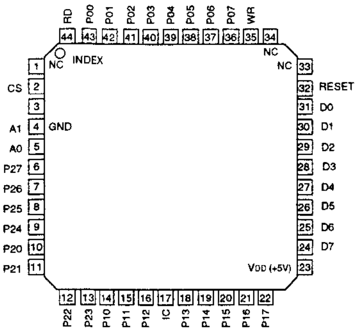
OUTPUT
BBLK, RBLK, GBLK ; B, R, G, BLANKING
BUSY ; BUSY OUT
CK OUT ; CLOCK
MP ; MASK PULSE
OSC OUT ; OSCILLATOR OUT
VR, VG, VB ; R, G, B, CHARACTER DATA
VCBL ; VIDEO CUT BLANKING

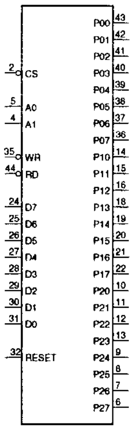

DATA 4
CLK 2
BUSY 1
CS 3
DATA INPUT SHIFFT REGISTER
INSTRUCTION DECODER
CONTROL SIGNAL
6 VDD
10 VSS
DATA BUFFER REGISTER
CAHRA SIZE REGISTER
H ADDRESS REGISTER
WRITE ADDRESS COUNTER
DATA SELECTOR
VIDEO RAM
CHARA DATA 8-BIT x 288 WORD
COLOR DATA 3-BIT x 288 WORD
BLINK DATA 1-BIT x 288 WORD
BACKGROUND CONTROL DATA REGISTER
DISPLAY CONTROL DATA REGISTER
CK OUT 7
H SIZE COUNTER
H POSITION COUNTER
H ADDRESS COUNTER
OSC IN 9
OSC CIRCUIT
L OSC
OSC OUT 8
V ADDRESS REGISTER
CHARACTER GENERATOR RAM 12x18-BIT x 16 WORD
CHARACTER GENERATOR ROM 12x18-BIT x 240 WORD
COSC IN
COSC OUT
SYNC PROTECT CIRCUIT
TIMING GENERATOR
V SIZE COUNTER
V POSITION COUNTER
V ADDRESS COUNTER
H SYNC 20
V SYNC 19
OUTPUT CONTROL
16 R BLK
17 G BLK
18 B BLK
11 MP
12 VR
13 VG
14 VB
15 VCBL

UPD71055GB-10-3B4(NEC)FLAT PACKAGE

C-MOS PARALLEL INTERFACE UNIT

—TOP VIEW—


RD 44
P00 43
P01 42
P02 41
P03 40
P04 39
P05 38
P06 37
P07 36
WR 35
34
INDEX
NC
NC 1
CS 2
3
A1 4 GND
A0 5
P27 6
P26 7
P25 8
P24 9
P20 10
P21 11
NC 33
RESET 32
D0 31
D1 30
D2 29
D3 28
D4 27
D5 26
D6 25
D7 24
VDD (+5V) 23
P22 12
P23 13
P10 14
P11 15
P12 16
IC 17
P13 18
P14 19
P15 20
P16 21
P17 22

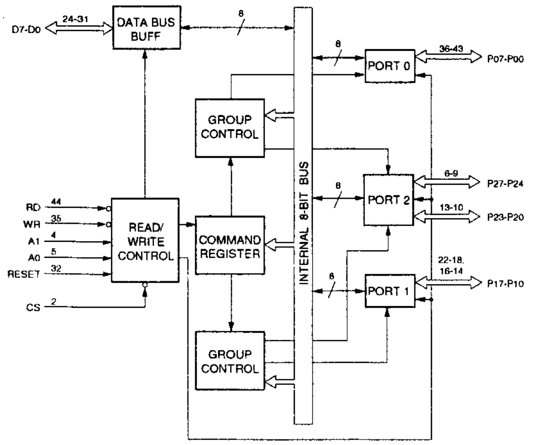

2 CS
5 A0
4 A1
35 WR
44 RD
24 D7
25 D6
26 D5
27 D4
28 D3
29 D2
30 D1
31 D0
32 RESET
P00 43
P01 42
P02 41
P03 40
P04 39
P05 38
P06 37
P07 36
P10 14
P11 15
P12 16
P13 18
P14 19
P15 20
P16 21
P17 22
P20 10
P21 11
P22 12
P23 13
P24 9
P25 8
P26 7
P27 6

A1, A0 ; ADDRESS
CS ; CHIP SELECT
D7-D0 ; DATA BUS
P07-P00 ; PORT 0
P17-P10 ; PORT 1
P27-P20 ; PORT 2
RD ; READ STROBE
WR ; WRITE STROBE

IC ; INTERNALLY CONNECTED

CS	RD	WR	A1	A0	OPERATION	CPU ACTION
0	0	1	0	0	PORT0→DATA•BUS	INPUT
0	0	1	0	1	PORT1→DATA•BUS	INPUT
0	0	1	1	0	PORT2→DATA•BUS	INPUT
0	0	1	1	1	DISABLE	
0	0	0	X	X		
0	1	0	0	0	DATA•BUS→PORT0	OUTPUT
0	1	0	0	1	DATA•BUS→PORT1	OUTPUT
0	1	0	1	0	DATA•BUS→PORT2	OUTPUT
0	1	0	1	1	DATA•BUS→COMMAND REGISTER	OUTPUT
0	1	1	X	X	HIGH IMPEDANCE	
1	X	X	X	X		

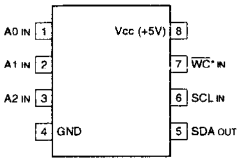
0 ; LOW LEVEL
1 ; HIGH LEVEL
X ; DON'T CARE

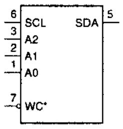

D7-D0
24-31
DATA BUS BUFF
8
PORT 0
36-43
P07-P00
GROUP CONTROL
INTERNAL 8-BIT BUS
PORT 2
6-9
P27-P24
13-10
P23-P20
RD 44
WR 35
A1 4
A0 5
RESET 32
CS 2
READ/ WRITE CONTROL
COMMAND REGISTER
PORT 1
22-18, 16-14
P17-P10
GROUP CONTROL

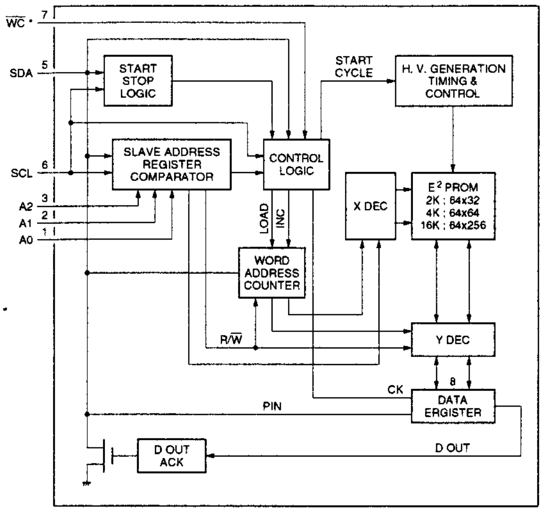
X24164SI(XICOR)(16K BIT)FLAT PACKAGE
X24C02S-3.0(XICOR)(2K BIT)FLAT PACKAGE

C-MOS SERIAL EEPROM

- TOP VIEW -


A0 IN 1
A1 IN 2
A2 IN 3
4 GND
Vcc (+5V) 8
7 WC* IN
6 SCL IN
5 SDA OUT

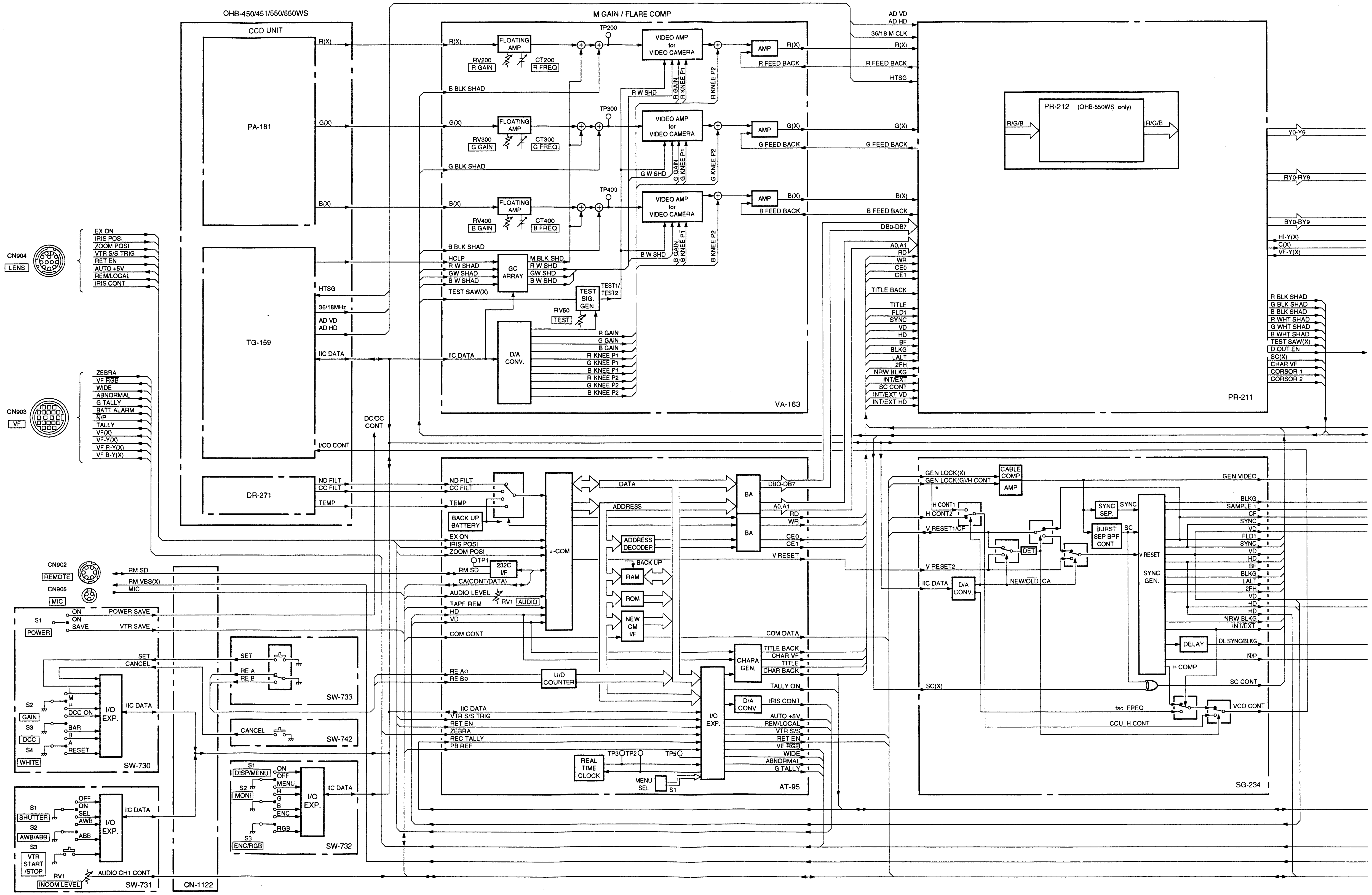

6 SCL
3 A2
2 A1
1 A0
7 WC*
SDA 5

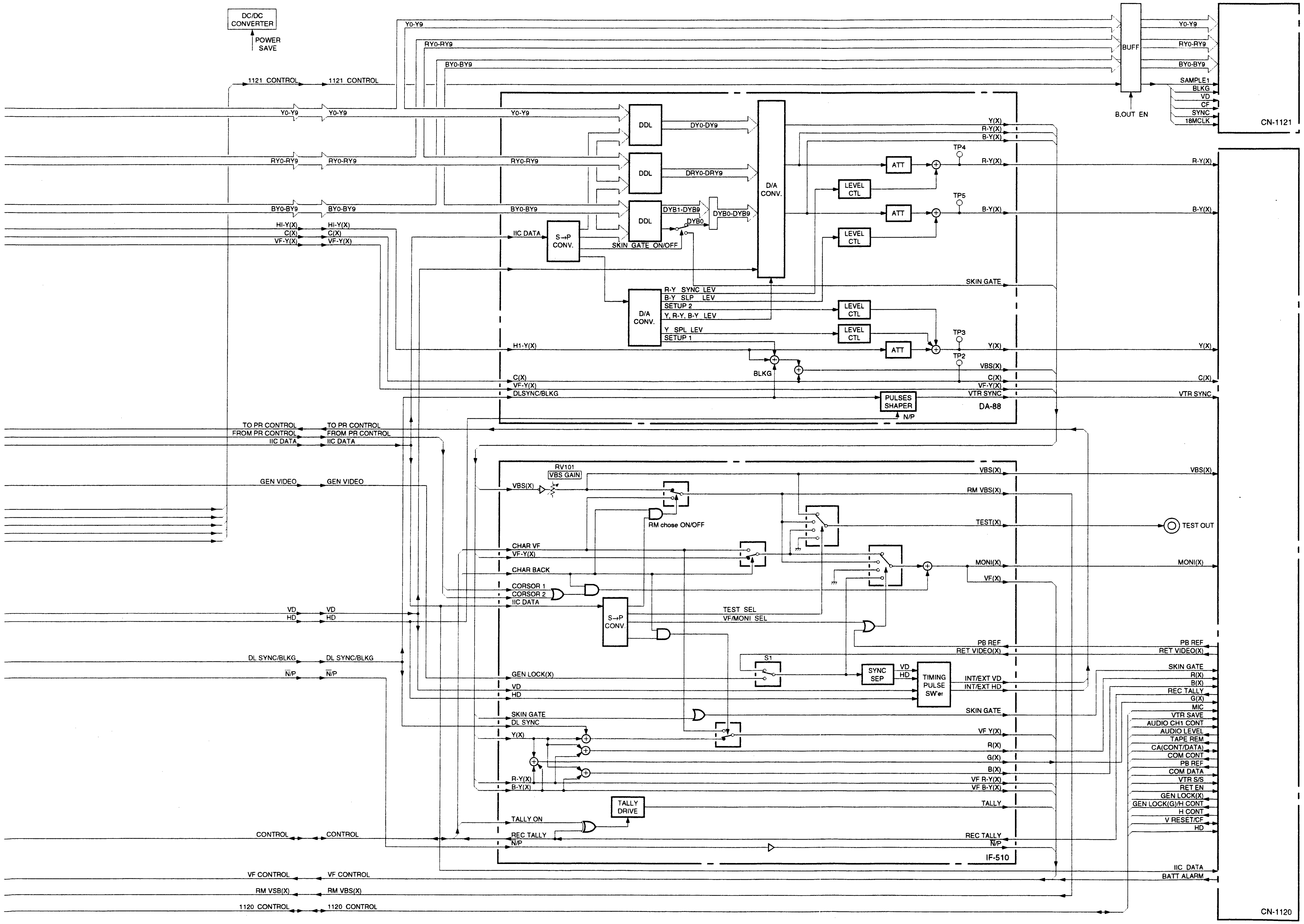

WC* 7
SDA 5
SCL 6
A2 3
A1 2
A0 1
START STOP LOGIC
START CYCLE
H. V. GENERATION TIMING & CONTROL
SLAVE ADDRESS REGISTER COMPARATOR
CONTROL LOGIC
LOAD
INC
X DEC
E² PROM 2K ; 64x32 4K ; 64x64 16K ; 64x256
WORD ADDRESS COUNTER
R/W
Y DEC
8
CK
PIN
DATA ERGISTER
D OUT ACK
D OUT

NOTE : * TEST (at X24164SIC7000)

Section 7
Block Diagrams

OVERALL BLOCK

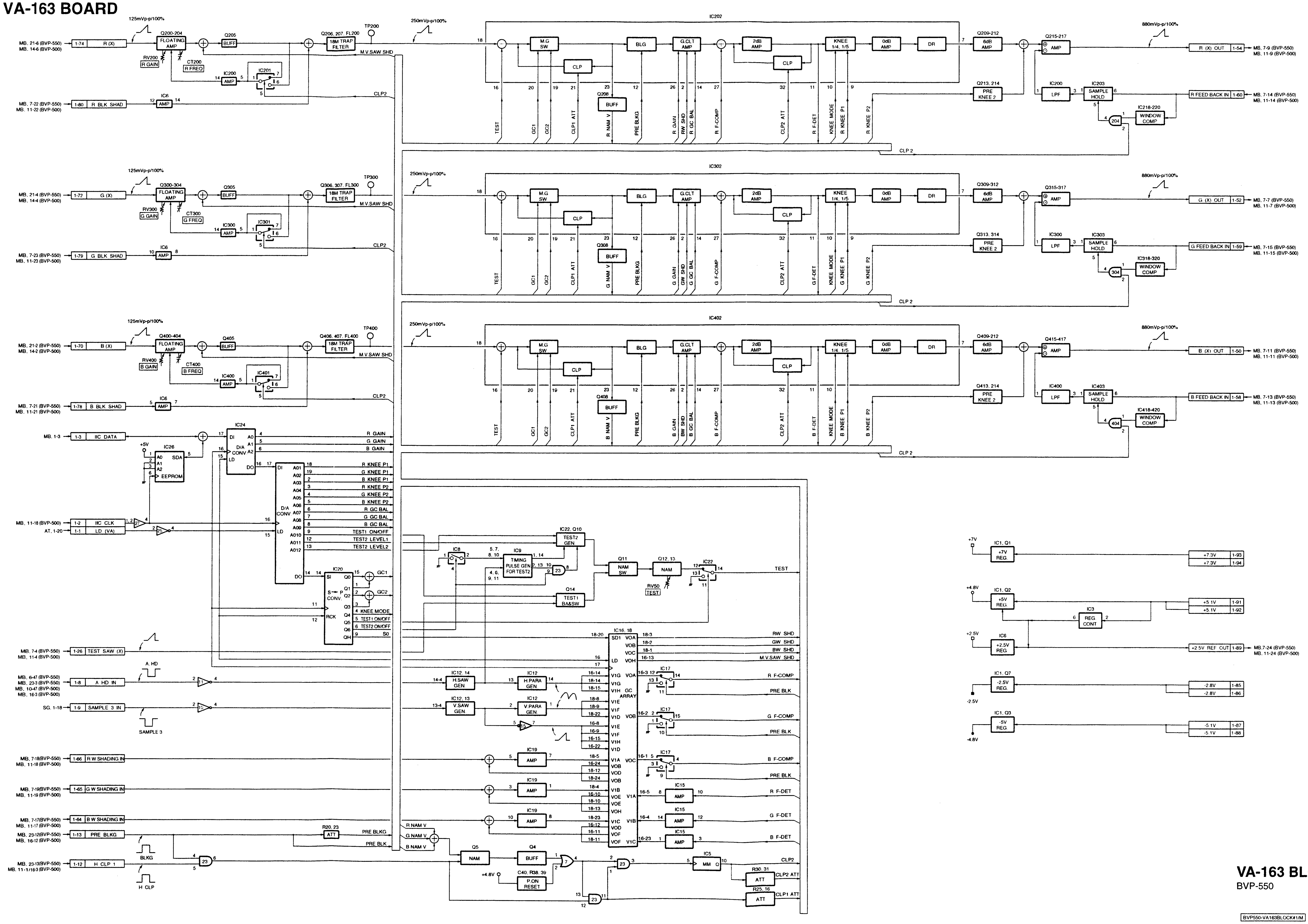

OHB-450/451/550/550WS
CCD UNIT
PA-181
TG-159
DR-271
M GAIN / FLARE COMP
FLOATING AMP
VIDEO AMP for VIDEO CAMERA
AMP
GC ARRAY
TEST SIG. GEN.
D/A CONV.
VA-163
PR-212 (OHB-550WS only)
PR-211
CN904
LENS
CN903
VF
CN902
REMOTE
CN905
MIC
DC/DC CONT
μ-COM
BA
ADDRESS DECODER
RAM
ROM
NEW CM I/F
CHARA GEN.
U/D COUNTER
I/O EXP.
REAL TIME CLOCK
AT-95
BACK UP BATTERY
232C I/F
CABLE COMP AMP
SYNC SEP.
BURST SEP BPF CONT.
DET
SYNC GEN.
DELAY
SG-234
SW-730
SW-731
SW-732
SW-733
SW-742
CN-1122
POWER
GAIN
DCC
WHITE
SHUTTER
AWB/ABB
VTR START /STOP
INCOM LEVEL
DISP/MENU
MONI
ENC/RGB
Y0-Y9
RY0-RY9
BY0-BY9
GEN VIDEO


DC/DC CONVERTER
POWER SAVE
1121 CONTROL
Y0-Y9
RY0-RY9
BY0-BY9
HI-Y(X)
C(X)
VF-Y(X)
IIC DATA
S→P CONV.
DDL
DY0-DY9
DRY0-DRY9
DYB1-DYB9
DYB0
DYB0-DYB9
SKIN GATE ON/OFF
D/A CONV.
R-Y SYNC LEV
B-Y SLP LEV
SETUP 2
Y, R-Y, B-Y LEV
Y SPL LEV
SETUP 1
ATT
LEVEL CTL
TP2
TP3
TP4
TP5
BLKG
Y(X)
R-Y(X)
B-Y(X)
SKIN GATE
VBS(X)
VTR SYNC
DLSYNC/BLKG
PULSES SHAPER
N/P
DA-88
BUFF
B.OUT EN
SAMPLE1
BLKG
VD
CF
SYNC
18MCLK
CN-1121
TO PR CONTROL
FROM PR CONTROL
GEN VIDEO
RV101
VBS GAIN
RM VBS(X)
RM chose ON/OFF
TEST(X)
TEST OUT
CHAR VF
CHAR BACK
CORSOR 1
CORSOR 2
MONI(X)
VF(X)
TEST SEL
VF/MONI SEL
VD
HD
DL SYNC/BLKG
PB REF
RET VIDEO(X)
S1
SYNC SEP
TIMING PULSE SW'er
INT/EXT VD
INT/EXT HD
GEN LOCK(X)
DL SYNC
VF Y(X)
R(X)
G(X)
B(X)
VF R-Y(X)
VF B-Y(X)
TALLY
TALLY DRIVE
TALLY ON
REC TALLY
IF-510
CONTROL
VF CONTROL
RM VSB(X)
RM VBS(X)
1120 CONTROL
MIC
VTR SAVE
AUDIO CH1 CONT
AUDIO LEVEL
TAPE REM
CA(CONT/DATA)
COM CONT
COM DATA
VTR S/S
RET EN
GEN LOCK(G)/H CONT
H CONT
V RESET/CF
BATT ALARM
CN-1120

OVERALL BLOCK
BVP-550

BVP550-OVERALL#1/M

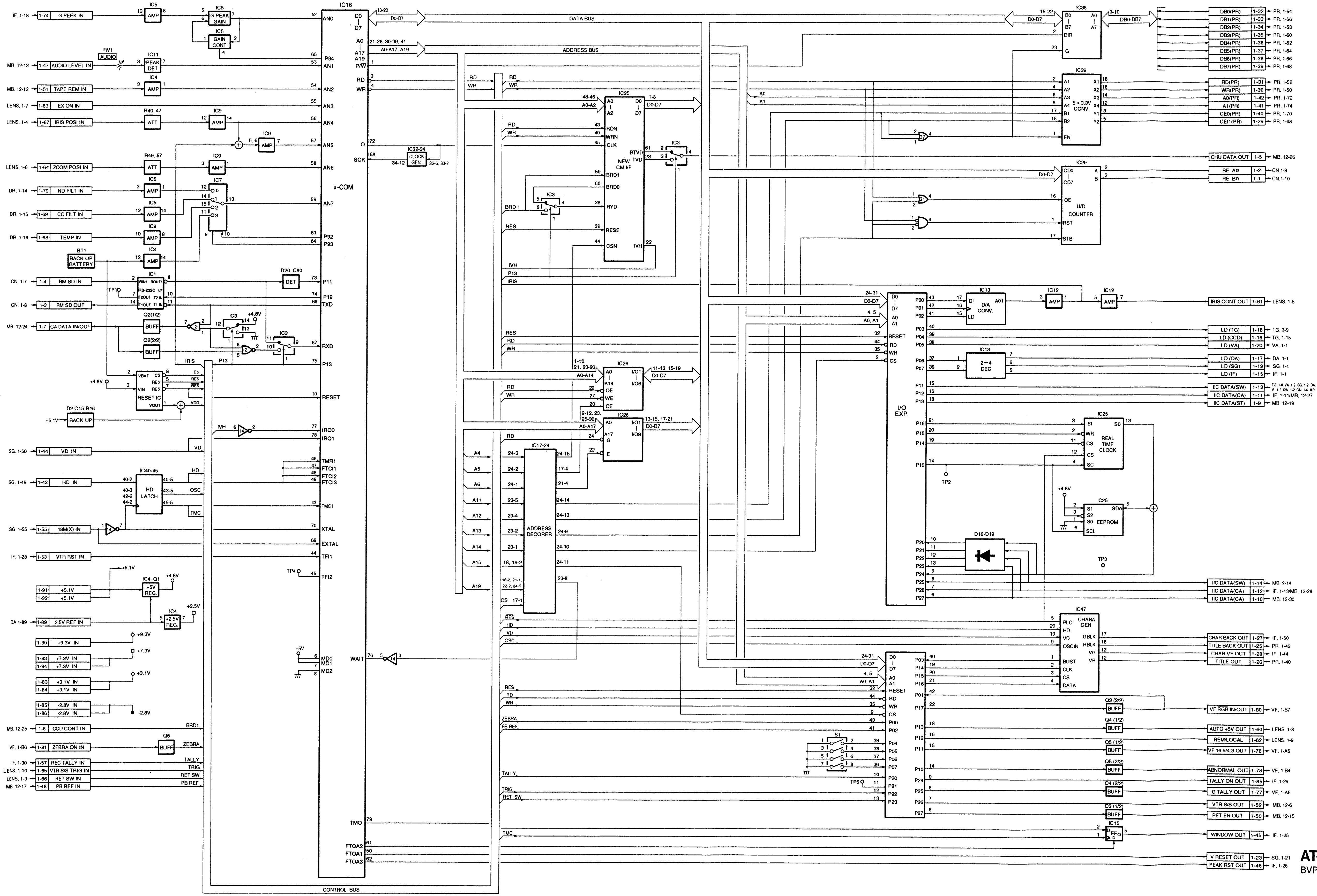
VA-163 BOARD


125mVp-p/100%
MB. 21-6 (BVP-550)
MB. 14-6 (BVP-500)
1-74
R (X)
Q200-204
FLOATING AMP
Q205
BUFF
Q206, 207, FL200
18M TRAP FILTER
TP200
M.V.SAW SHD
RV200
R GAIN
CT200
R FREQ
IC200
AMP
IC201
CLP2
MB. 7-22 (BVP-550)
MB. 11-22 (BVP-500)
1-80
R BLK SHAD
IC6
AMP
250mVp-p/100%
IC202
M.G SW
CLP
BLG
G.CLT AMP
2dB AMP
KNEE 1/4, 1/5
0dB AMP
DR
Q208
BUFF
TEST
GC1
GC2
CLP1 ATT
R NAM V
PRE BLKG
R GAIN
RW SHD
R GC BAL
R F-COMP
CLP2 ATT
R F-DET
KNEE MODE
R KNEE P1
R KNEE P2
Q209-212
6dB AMP
Q213, 214
PRE KNEE 2
Q215-217
AMP
IC200
LPF
IC203
SAMPLE HOLD
IC218-220
WINDOW COMP
880mVp-p/100%
R (X) OUT
1-54
MB. 7-9 (BVP-550)
MB. 11-9 (BVP-500)
R FEED BACK IN
1-60
MB. 7-14 (BVP-550)
MB. 11-14 (BVP-500)
CLP 2
MB. 21-4 (BVP-550)
MB. 14-4 (BVP-500)
1-72
G (X)
Q300-304
Q305
Q306, 307, FL300
TP300
RV300
G GAIN
CT300
G FREQ
IC300
IC301
MB. 7-23 (BVP-550)
MB. 11-23 (BVP-500)
1-79
G BLK SHAD
IC302
Q308
G NAM V
G GAIN
GW SHD
G GC BAL
G F-COMP
G F-DET
G KNEE P1
G KNEE P2
Q309-312
Q313, 314
Q315-317
IC303
IC318-320
G (X) OUT
1-52
MB. 7-7 (BVP-550)
MB. 11-7 (BVP-500)
G FEED BACK IN
1-59
MB. 7-15 (BVP-550)
MB. 11-15 (BVP-500)
MB. 21-2 (BVP-550)
MB. 14-2 (BVP-500)
1-70
B (X)
Q400-404
Q405
Q406, 407, FL400
TP400
RV400
B GAIN
CT400
B FREQ
IC400
IC401
MB. 7-21 (BVP-550)
MB. 11-21 (BVP-500)
1-78
B BLK SHAD
IC402
Q408
B NAM V
B GAIN
BW SHD
B GC BAL
B F-COMP
B F-DET
B KNEE P1
B KNEE P2
Q409-212
Q413, 214
Q415-417
IC403
IC418-420
B (X) OUT
1-50
MB. 7-11 (BVP-550)
MB. 11-11 (BVP-500)
B FEED BACK IN
1-58
MB. 7-13 (BVP-550)
MB. 11-13 (BVP-500)
MB. 1-3
1-3
IIC DATA
IC26
EEPROM
IC24
D/A CONV
R GAIN
G GAIN
B GAIN
R KNEE P1
G KNEE P1
B KNEE P1
R KNEE P2
G KNEE P2
B KNEE P2
R GC BAL
G GC BAL
B GC BAL
TEST1 ON/OFF
TEST2 LEVEL1
TEST2 LEVEL2
MB. 11-18 (BVP-500)
1-2
IIC CLK
AT. 1-20
1-1
LD (VA)
IC20
S→P CONV.
KNEE MODE
TEST1 ON/OFF
TEST2 ON/OFF
S0
IC22, Q10
TEST2 GEN
IC8
IC9
TIMING PULSE GEN FOR TEST2
Q11
NAM SW
Q12, 13
NAM
RV50
TEST
IC22
TEST
Q14
TEST1 BA&SW
MB. 7-4 (BVP-550)
MB. 11-4 (BVP-500)
1-26
TEST SAW (X)
A HD
MB. 6-47 (BVP-550)
MB. 23-3 (BVP-550)
MB. 10-47 (BVP-500)
MB. 16-3 (BVP-500)
1-8
A HD IN
SG. 1-18
1-9
SAMPLE 3 IN
SAMPLE 3
IC12, 14
H.SAW GEN
IC12
H.PARA GEN
IC12, 13
V.SAW GEN
V.PARA GEN
IC16, 18
GC ARRAY
RW SHD
GW SHD
BW SHD
M.V.SAW SHD
IC17
R F-COMP
PRE BLK
G F-COMP
B F-COMP
IC19
AMP
IC15
R F-DET
G F-DET
B F-DET
MB. 7-18 (BVP-550)
MB. 11-18 (BVP-500)
1-66
R W SHADING IN
MB. 7-19 (BVP-550)
MB. 11-19 (BVP-500)
1-65
G W SHADING IN
MB. 7-17 (BVP-550)
MB. 11-17 (BVP-500)
1-64
B W SHADING IN
MB. 23-12 (BVP-550)
MB. 16-12 (BVP-500)
1-13
PRE BLKG
R20, 23
ATT
PRE BLKG
PRE BLK
R NAM V
G NAM V
B NAM V
BLKG
MB. 23-13 (BVP-550)
MB. 11-1/16-3 (BVP-500)
1-12
H CLP 1
H CLP
Q5
NAM
Q4
BUFF
+4.8V
C40, R38, 39
P.ON RESET
IC5
MM
CLP2
R30, 31
ATT
CLP2 ATT
R25, 16
CLP1 ATT
+7V
IC1, Q1
+7V REG
+7.3V
1-93
1-94
+4.8V
IC1, Q2
+5V REG
IC3
REG CONT
+5.1V
1-91
1-92
+2.5V
IC6
+2.5V REG
+2.5V REF OUT
1-89
MB. 7-24 (BVP-550)
MB. 11-24 (BVP-500)
IC1, Q7
-2.5V REG
-2.5V
-2.8V
1-85
1-86
IC1, Q3
-5V REG
-4.8V
-5.1V
1-87
1-88

VA-163 BLOCK
BVP-550

BVP550-VA163BLOCK#1/M

AT-95 BOARD

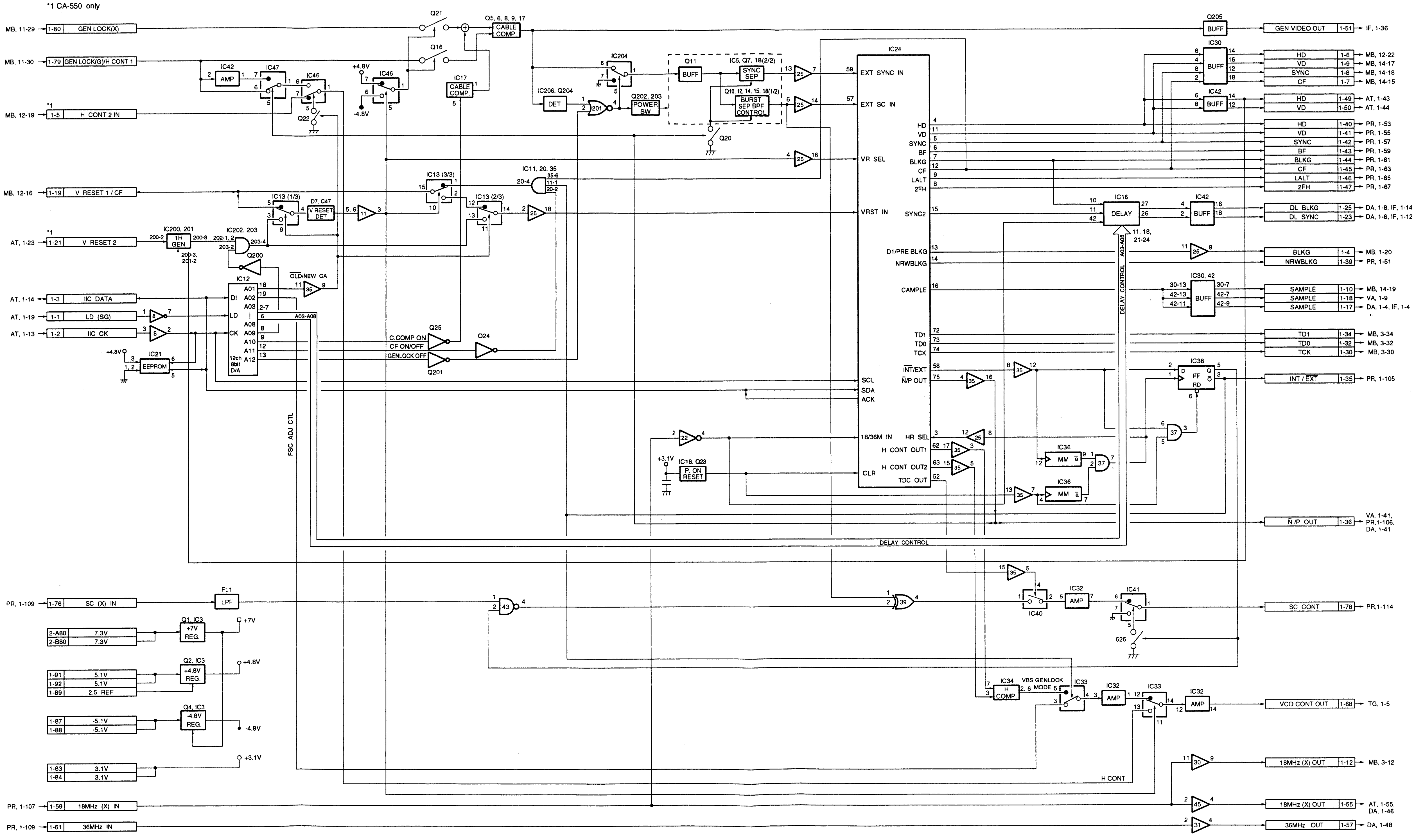

IF. 1-18 1-74 G PEEK IN
MB. 12-13 1-47 AUDIO LEVEL IN
RV1 AUDIO
MB. 12-12 1-51 TAPE REM IN
LENS. 1-7 1-63 EX ON IN
LENS. 1-4 1-67 IRIS POSI IN
LENS. 1-6 1-64 ZOOM POSI IN
DR. 1-14 1-70 ND FILT IN
DR. 1-15 1-69 CC FILT IN
DR. 1-16 1-68 TEMP IN
BT1 BACK UP BATTERY
CN. 1-7 1-4 RM SD IN
CN. 1-8 1-3 RM SD OUT
MB. 12-24 1-7 CA DATA IN/OUT
SG. 1-50 1-44 VD IN
SG. 1-49 1-43 HD IN
SG. 1-55 1-55 18M(X) IN
IF. 1-28 1-53 VTR RST IN
1-91 +5.1V
1-92 +5.1V
DA.1-89 1-89 2.5V REF IN
1-90 +9.3V IN
1-93 +7.3V IN
1-94 +7.3V IN
1-83 +3.1V IN
1-84 +3.1V IN
1-85 -2.8V IN
1-86 -2.8V IN
MB. 12-25 1-6 CCU CONT IN
VF. 1-B6 1-81 ZEBRA ON IN
IF. 1-30 1-57 REC TALLY IN
LENS. 1-10 1-65 VTR S/S TRIG IN
LENS. 1-3 1-66 RET SW IN
MB. 12-17 1-48 PB REF IN
IC5 AMP
IC5 G PEAK GAIN
IC5 GAIN CONT
IC11 PEAK DET
IC4 AMP
R40, 47 ATT
IC9 AMP
R49, 57 ATT
IC7
IC1 RS-232C I/F
D20, C80 DET
Q2(1/2) BUFF
Q2(2/2) BUFF
IC3
RESET IC
D2 C15 R16 BACK UP
IC40-45 HD LATCH
IC4, Q1 +5V REG.
IC4 +2.5V REG.
Q6 BUFF
IC16 µ-COM
IC32-34 CLOCK GEN.
DATA BUS
ADDRESS BUS
CONTROL BUS
IC35 NEW CM I/F
IC26
IC17-24 ADDRESS DECORER
IC38
IC39 5→3.3V CONV
IC29 U/D COUNTER
IC13 D/A CONV.
IC13 2→4 DEC
IC12 AMP
I/O EXP.
IC25 REAL TIME CLOCK
IC25 EEPROM
D16-D19
IC47 CHARA GEN
IC15 FF
S1
TP1
TP2
TP3
TP4
TP5
DB0(PR) 1-32 PR. 1-54
DB1(PR) 1-33 PR. 1-56
DB2(PR) 1-34 PR. 1-58
DB3(PR) 1-35 PR. 1-60
DB4(PR) 1-36 PR. 1-62
DB5(PR) 1-37 PR. 1-64
DB6(PR) 1-38 PR. 1-66
DB7(PR) 1-39 PR. 1-68
RD(PR) 1-31 PR. 1-52
WR(PR) 1-30 PR. 1-50
A0(PR) 1-42 PR. 1-72
A1(PR) 1-41 PR. 1-74
CE0(PR) 1-40 PR. 1-70
CEI1(PR) 1-29 PR. 1-48
CHU DATA OUT 1-5 MB. 12-26
RE A0 1-2 CN.1-9
RE B0 1-1 CN.1-10
IRIS CONT OUT 1-61 LENS. 1-5
LD (TG) 1-18 TG. 3-9
LD (CCD) 1-16 TG. 1-15
LD (VA) 1-20 VA. 1-1
LD (DA) 1-17 DA. 1-1
LD (SG) 1-19 SG. 1-1
LD (IF) 1-15 IF. 1-1
IIC DATA(SW) 1-13 TG. 1-8, VA. 1-2, SG. 1-2, DA. 1-2, IF. 1-2, SW. 1-2, CN. 1-6, MB. 2-13
IIC DATA(CA) 1-11 IF. 1-11/MB. 12-27
IIC DATA(ST) 1-9 MB. 12-19
IIC DATA(SW) 1-14 MB. 2-14
IIC DATA(CA) 1-12 IF. 1-13/MB. 12-28
IIC DATA(CA) 1-10 MB. 12-30
CHAR BACK OUT 1-27 IF. 1-50
TITLE BACK OUT 1-25 PR. 1-42
CHAR VF OUT 1-28 IF. 1-44
TITLE OUT 1-26 PR. 1-40
VF RGB IN/OUT 1-80 VF. 1-B7
AUTO +5V OUT 1-60 LENS. 1-8
REM/LOCAL 1-62 LENS. 1-9
VF 16:9/4:3 OUT 1-76 VF. 1-A6
ABNORMAL OUT 1-78 VF. 1-B4
TALLY ON OUT 1-85 IF. 1-29
G TALLY OUT 1-77 VF. 1-A5
VTR S/S OUT 1-52 MB. 12-6
PET EN OUT 1-50 MB. 12-15
WINDOW OUT 1-45 IF. 1-25
V RESET OUT 1-23 SG. 1-21
PEAK RST OUT 1-46 IF. 1-26

AT-95 BLOCK

BVP-550

BVP550-AT95BLOCK#1/M

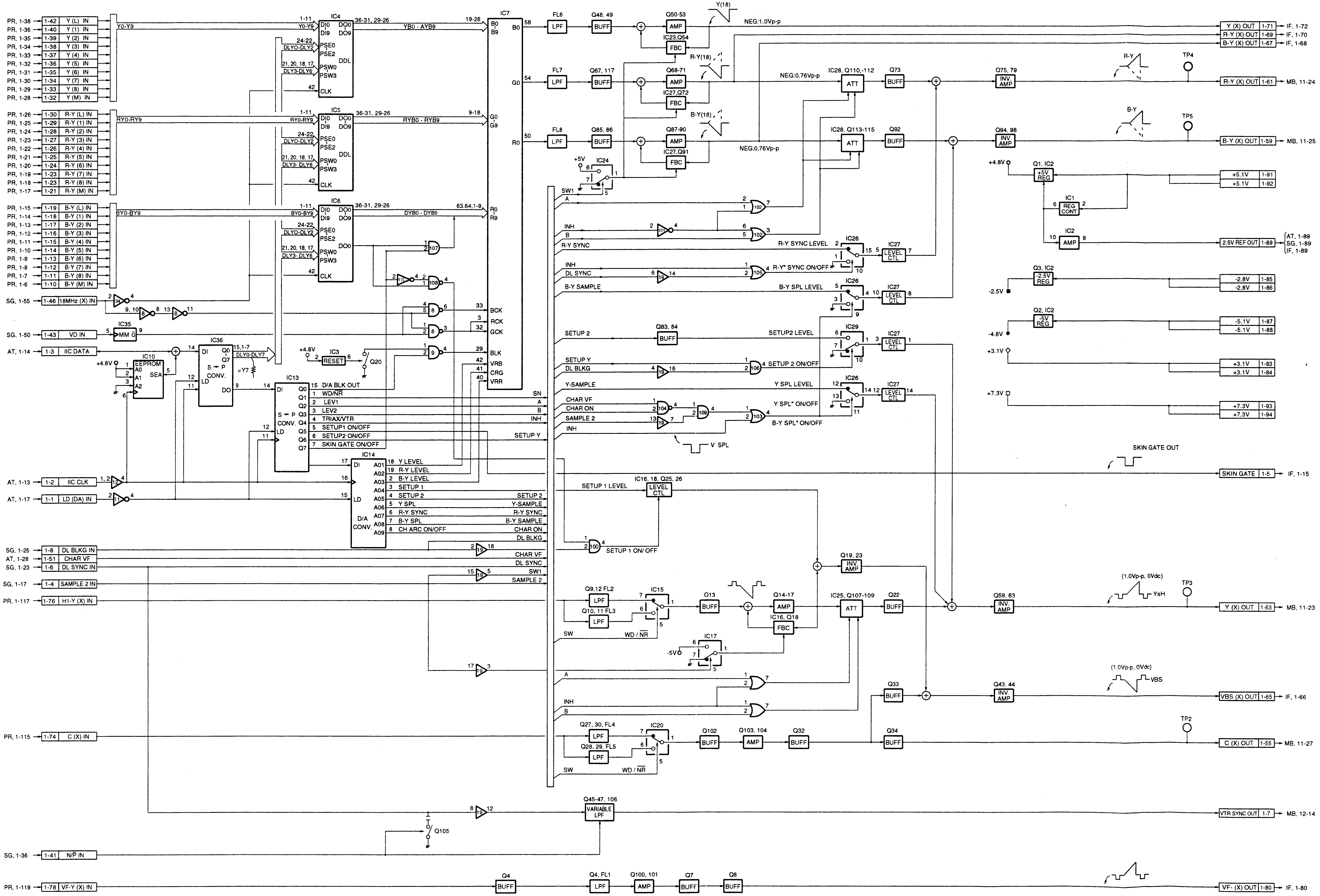
SG-234 BOARD


*1 CA-550 only
MB, 11-29 1-80 GEN LOCK(X)
MB, 11-30 1-79 GEN LOCK(G)/H CONT 1
*1 MB, 12-19 1-5 H CONT 2 IN
MB, 12-16 1-19 V RESET 1 / CF
*1 AT, 1-23 1-21 V RESET 2
AT, 1-14 1-3 IIC DATA
AT, 1-19 1-1 LD (SG)
AT, 1-13 1-2 IIC CK
Q21
Q16
Q5, 6, 8, 9, 17 CABLE COMP.
IC42 AMP
IC47
IC46
Q22
IC17 CABLE COMP.
IC206, Q204 DET
IC204
Q202, 203 POWER SW
Q11 BUFF
IC5, Q7, 18(2/2) SYNC SEP
Q10, 12, 14, 15, 18(1/2) BURST SEP BPF CONTROL
Q20
IC24
EXT SYNC IN
EXT SC IN
VR SEL
VRST IN
HD VD SYNC BF BLKG CF LALT 2FH
SYNC2
D1/PRE BLKG
NRWBLKG
CAMPLE
TD1 TD0 TCK
INT/EXT
N/P OUT
SCL SDA ACK
18/36M IN
HR SEL
H CONT OUT1
H CONT OUT2
CLR
TDC OUT
IC11, 20, 35
IC13 (1/3)
IC13 (3/3)
IC13 (2/3)
D7, C47 V RESET DET
IC200, 201 1H GEN
IC202, 203
Q200
OLD/NEW CA
IC12 DI LD CK A01 A02 A03 A08 A09 A10 A11 A12 12ch 8bit D/A
A03-A08
+4.8V IC21 EEPROM
Q25 C.COMP ON CF ON/OFF GENLOCK OFF
Q24
Q201
FSC ADJ CTL
IC18, Q23 P. ON RESET
+3.1V
IC16 DELAY
DELAY CONTROL
IC42 BUFF
IC30, 42 BUFF
IC38 FF
IC36 MM
Q205 BUFF
IC30 BUFF
GEN VIDEO OUT 1-51 IF, 1-36
HD 1-6 MB, 12-22
VD 1-9 MB, 14-17
SYNC 1-8 MB, 14-18
CF 1-7 MB, 14-15
HD 1-49 AT, 1-43
VD 1-50 AT, 1-44
HD 1-40 PR, 1-53
VD 1-41 PR, 1-55
SYNC 1-42 PR, 1-57
BF 1-43 PR, 1-59
BLKG 1-44 PR, 1-61
CF 1-45 PR, 1-63
LALT 1-46 PR, 1-65
2FH 1-47 PR, 1-67
DL BLKG 1-25 DA, 1-8, IF, 1-14
DL SYNC 1-23 DA, 1-6, IF, 1-12
BLKG 1-4 MB, 1-20
NRWBLKG 1-39 PR, 1-51
SAMPLE 1-10 MB, 14-19
SAMPLE 1-18 VA, 1-9
SAMPLE 1-17 DA, 1-4, IF, 1-4
TD1 1-34 MB, 3-34
TD0 1-32 MB, 3-32
TCK 1-30 MB, 3-30
INT / EXT 1-35 PR, 1-105
N/P OUT 1-36 VA, 1-41, PR, 1-106, DA, 1-41
PR, 1-109 1-76 SC (X) IN
FL1 LPF
IC40
IC32 AMP
IC41
626
SC CONT 1-78 PR, 1-114
2-A80 7.3V
2-B80 7.3V
Q1, IC3 +7V REG.
+7V
1-91 5.1V
1-92 5.1V
1-89 2.5 REF
Q2, IC3 +4.8V REG.
+4.8V
1-87 -5.1V
1-88 -5.1V
Q4, IC3 -4.8V REG.
-4.8V
1-83 3.1V
1-84 3.1V
+3.1V
IC34 H COMP.
VBS GENLOCK 2, 6 MODE
IC33
IC32 AMP
VCO CONT OUT 1-68 TG, 1-5
H CONT
18MHz (X) OUT 1-12 MB, 3-12
18MHz (X) OUT 1-55 AT, 1-55, DA, 1-46
36MHz OUT 1-57 DA, 1-48
PR, 1-107 1-59 18MHz (X) IN
PR, 1-109 1-61 36MHz IN

SG-234 BLOCK
BVP-550

BVP550-SG234BLOCK#1/M

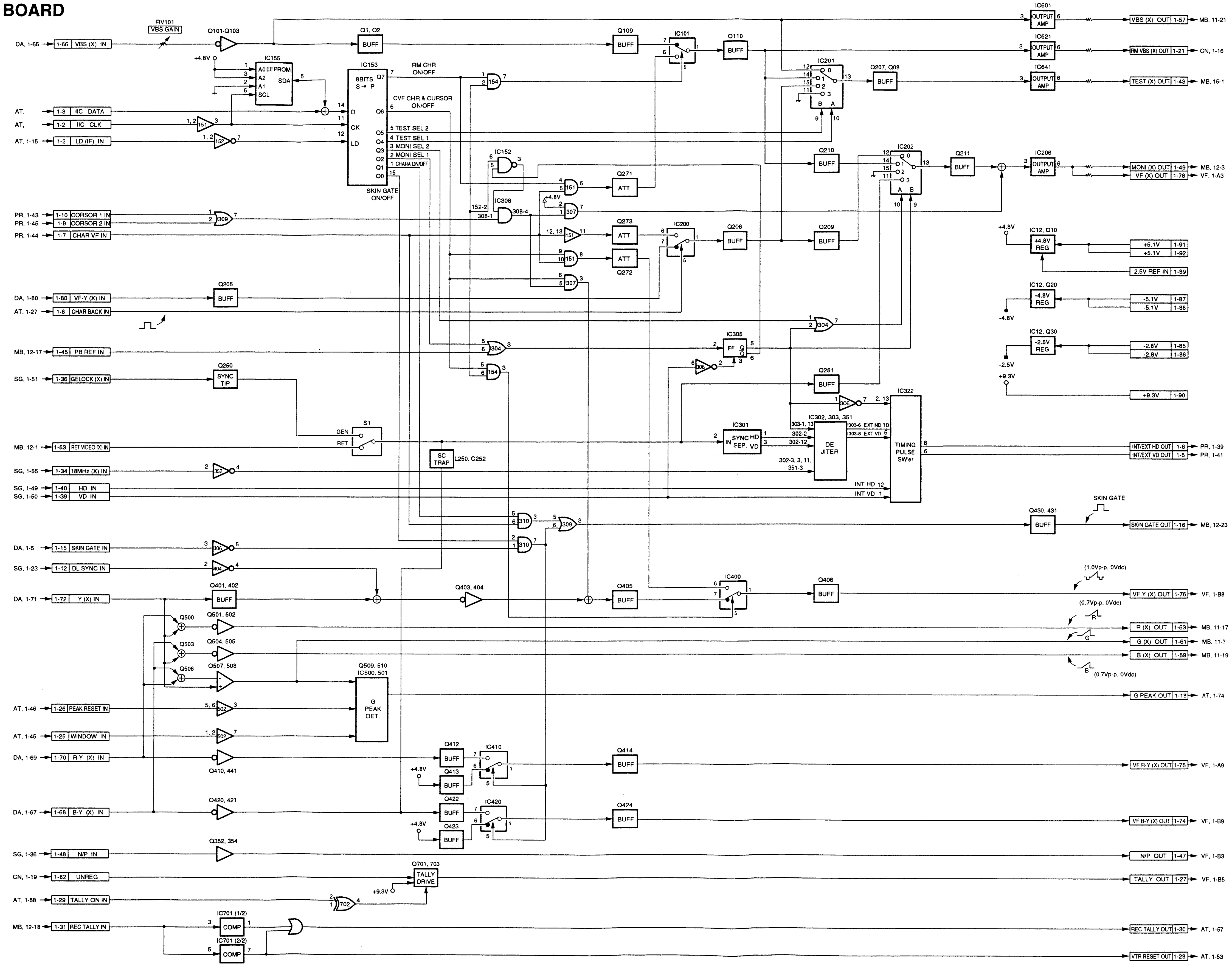
DA-88 BOARD


PR, 1-38 1-42 Y (L) IN
PR, 1-36 1-40 Y (1) IN
PR, 1-35 1-39 Y (2) IN
PR, 1-34 1-38 Y (3) IN
PR, 1-33 1-37 Y (4) IN
PR, 1-32 1-36 Y (5) IN
PR, 1-31 1-35 Y (6) IN
PR, 1-30 1-34 Y (7) IN
PR, 1-29 1-33 Y (8) IN
PR, 1-28 1-32 Y (M) IN
Y0-Y9
PR, 1-26 1-30 R-Y (L) IN
PR, 1-25 1-29 R-Y (1) IN
PR, 1-24 1-28 R-Y (2) IN
PR, 1-23 1-27 R-Y (3) IN
PR, 1-22 1-26 R-Y (4) IN
PR, 1-21 1-25 R-Y (5) IN
PR, 1-20 1-24 R-Y (6) IN
PR, 1-19 1-23 R-Y (7) IN
PR, 1-18 1-23 R-Y (8) IN
PR, 1-17 1-21 R-Y (M) IN
RY0-RY9
PR, 1-15 1-19 B-Y (L) IN
PR, 1-14 1-18 B-Y (1) IN
PR, 1-13 1-17 B-Y (2) IN
PR, 1-12 1-16 B-Y (3) IN
PR, 1-11 1-15 B-Y (4) IN
PR, 1-10 1-14 B-Y (5) IN
PR, 1-9 1-13 B-Y (6) IN
PR, 1-8 1-12 B-Y (7) IN
PR, 1-7 1-11 B-Y (8) IN
PR, 1-6 1-10 B-Y (M) IN
BY0-BY9
SG, 1-55 1-46 18MHz (X) IN
SG, 1-50 1-43 VD IN
IC35
MM
AT, 1-14 1-3 IIC DATA
IC10
EEPROM
A0
A1
A2
SEA
+4.8V
IC36
DI
S → P CONV.
LD
DO
Q0
Q7
15,1-7
DLY0-DLY7
μY7
IC3
RESET
Q20
+4.8V
IC4
DI0 DO0
DI9 DO9
PSE0
PSE2
PSW0
PSW3
CLK
DDL
1-11
Y0-Y9
24-22
DLY0-DLY2
21, 20, 18, 17
DLY3-DLY6
36-31, 29-26
YB0 - AYB9
19-28
IC5
RY0-RY9
RYB0 - RYB9
9-18
IC6
BY0-BY9
DYB0 - DYB9
63,64,1-9
DO0
IC7
B0
B9
G0
G9
R0
R9
BCK
RCK
GCK
BLK
VRB
CRG
VRR
IC13
DI
S → P CONV.
LD
Q0
Q1
Q2
Q3
Q4
Q5
Q6
Q7
15 D/A BLK OUT
1 WD/NR
2 LEV1
3 LEV2
4 TRIAX/VTR
5 SETUP1 ON/OFF
6 SETUP2 ON/OFF
7 SKIN GATE ON/OFF
IC14
DI
LD
D/A CONV.
A01
A02
A03
A04
A05
A06
A07
A08
A09
18 Y LEVEL
19 R-Y LEVEL
2 B-Y LEVEL
3 SETUP 1
4 SETUP 2
5 Y SPL
6 R-Y SYNC
7 B-Y SPL
8 CH ARC ON/OFF
SN
A
B
INH
SETUP Y
SETUP 2
Y-SAMPLE
R-Y SYNC
B-Y SAMPLE
CHAR ON
DL BLKG
CHAR VF
DL SYNC
SW1
SAMPLE 2
AT, 1-13 1-2 IIC CLK
AT, 1-17 1-1 LD (DA) IN
SG, 1-25 1-8 DL BLKG IN
AT, 1-28 1-51 CHAR VF
SG, 1-23 1-6 DL SYNC IN
SG, 1-17 1-4 SAMPLE 2 IN
PR, 1-117 1-76 H1-Y (X) IN
PR, 1-115 1-74 C (X) IN
SG, 1-36 1-41 N/P IN
PR, 1-119 1-78 VF-Y (X) IN
FL6
LPF
Q48, 49
BUFF
Q50-53
AMP
IC23,Q54
FBC
Y(18)
NEG:1.0Vp-p
FL7
Q67, 117
Q68-71
IC27,Q72
R-Y(18)
NEG:0.76Vp-p
IC28, Q110,-112
ATT
Q73
Q75, 79
INV. AMP
R-Y
TP4
FL8
Q85, 86
Q87-90
IC27,Q91
B-Y(18)
NEG:0.76Vp-p
IC28, Q113-115
Q92
Q94, 98
B-Y
TP5
+5V
IC24
SW1
INH
R-Y SYNC
DL SYNC
B-Y SAMPLE
R-Y SYNC LEVEL
R-Y* SYNC ON/OFF
B-Y SPL LEVEL
IC26
IC27
LEVEL CTL
SETUP 2
Q83, 84
SETUP2 LEVEL
IC29
SETUP Y
DL BLKG
SETUP 2 ON/OFF
Y-SAMPLE
Y SPL LEVEL
CHAR VF
CHAR ON
SAMPLE 2
Y SPL* ON/OFF
B-Y SPL* ON/OFF
V SPL
+4.8V
Q1, IC2
+5V REG
IC1
REG CONT
IC2
AMP
Q3, IC2
-2.5V REG
-2.5V
Q2, IC2
-5V REG
-4.8V
+3.1V
+7.3V
SKIN GATE OUT
IC16, 18, Q25, 26
SETUP 1 LEVEL
LEVEL CTL
SETUP 1 ON/ OFF
Q19, 23
INV. AMP
Q9,12 FL2
Q10, 11 FL3
LPF
IC15
Q13
Q14-17
IC16, Q18
IC25, Q107-109
Q22
Q59, 63
SW
WD / NR
IC17
-5V
(1.0Vp-p, 0Vdc)
YsH
TP3
Q33
Q43, 44
(1.0Vp-p, 0Vdc)
VBS
Q27, 30, FL4
Q28, 29, FL5
IC20
Q102
Q103, 104
Q32
Q34
TP2
Q45-47, 106
VARIABLE LPF
Q105
Q4
Q4, FL1
Q100, 101
Q7
Q8
Y (X) OUT 1-71 IF, 1-72
R-Y (X) OUT 1-69 IF, 1-70
B-Y (X) OUT 1-67 IF, 1-68
R-Y (X) OUT 1-61 MB, 11-24
B-Y (X) OUT 1-59 MB, 11-25
+5.1V 1-91
+5.1V 1-92
2.5V REF OUT 1-89 AT, 1-89 SG, 1-89 IF, 1-89
-2.8V 1-85
-2.8V 1-86
-5.1V 1-87
-5.1V 1-88
+3.1V 1-83
+3.1V 1-84
+7.3V 1-93
+7.3V 1-94
SKIN GATE 1-5 IF, 1-15
Y (X) OUT 1-63 MB, 11-23
VBS (X) OUT 1-65 IF, 1-66
C (X) OUT 1-55 MB, 11-27
VTR SYNC OUT 1-7 MB, 12-14
VF- (X) OUT 1-80 IF, 1-80

DA-88 BLOCK
BVP-550

BVP550-DA88BLOCK#1/M

IF-510 BOARD


DA, 1-65 → 1-66 VBS (X) IN
RV101 VBS GAIN
Q101-Q103
Q1, Q2 BUFF
Q109 BUFF
IC101
Q110 BUFF
IC601 OUTPUT AMP → VBS (X) OUT 1-57 → MB, 11-21
IC621 OUTPUT AMP → RM VBS (X) OUT 1-21 → CN, 1-16
IC641 OUTPUT AMP → TEST (X) OUT 1-43 → MB, 15-1
IC201
Q207, Q08 BUFF
+4.8V
IC155 A0 EEPROM A2 A1 SCL SDA
IC153 8BITS S→P D CK LD Q7 Q6 Q5 Q4 Q3 Q2 Q1 Q0
RM CHR ON/OFF
CVF CHR & CURSOR ON/OFF
5 TEST SEL 2
4 TEST SEL 1
3 MONI SEL 2
2 MONI SEL 1
1 CHARA ON/OFF
SKIN GATE ON/OFF
AT, → 1-3 IIC DATA
AT, → 1-2 IIC CLK
AT, 1-15 → 1-2 LD (IF) IN
IC152
IC308
152-2
308-1
308-4
Q271 ATT
Q273 ATT
Q272 ATT
IC200
Q206 BUFF
Q209 BUFF
Q210 BUFF
IC202
Q211 BUFF
IC206 OUTPUT AMP → MONI (X) OUT 1-49 → MB, 12-3
VF (X) OUT 1-78 → VF, 1-A3
PR, 1-43 → 1-10 CORSOR 1 IN
PR, 1-45 → 1-9 CORSOR 2 IN
PR, 1-44 → 1-7 CHAR VF IN
+4.8V
IC12, Q10 +4.8V REG
+5.1V 1-91
+5.1V 1-92
2.5V REF IN 1-89
IC12, Q20 -4.8V REG
-5.1V 1-87
-5.1V 1-88
-4.8V
IC12, Q30 -2.5V REG
-2.8V 1-85
-2.8V 1-86
-2.5V
+9.3V
+9.3V 1-90
DA, 1-80 → 1-80 VF-Y (X) IN
Q205 BUFF
AT, 1-27 → 1-8 CHAR BACK IN
MB, 12-17 → 1-45 PB REF IN
SG, 1-51 → 1-36 GELOCK (X) IN
Q250 SYNC TIP
IC305 FF Q Q̄
Q251 BUFF
IC322 TIMING PULSE SW'er
IC302, 303, 351 DE JITER
303-1, 13
302-2
302-12
303-6 EXT ND 10
303-8 EXT VD 5
302-3, 3, 11, 351-3
IC301 IN SYNC SEP. HD VD
S1 GEN RET
MB, 12-1 → 1-53 RET VIDEO (X) IN
SC TRAP
L250, C252
INT/EXT HD OUT 1-6 → PR, 1-39
INT/EXT VD OUT 1-5 → PR, 1-41
SG, 1-55 → 1-34 18MHz (X) IN
SG, 1-49 → 1-40 HD IN
SG, 1-50 → 1-39 VD IN
INT HD 12
INT VD 1
SKIN GATE
Q430, 431 BUFF → SKIN GATE OUT 1-16 → MB, 12-23
DA, 1-5 → 1-15 SKIN GATE IN
SG, 1-23 → 1-12 DL SYNC IN
DA, 1-71 → 1-72 Y (X) IN
Q401, 402 BUFF
Q403, 404
Q405 BUFF
IC400
Q406 BUFF
(1.0Vp-p, 0Vdc)
VF Y (X) OUT 1-76 → VF, 1-B8
(0.7Vp-p, 0Vdc)
Q500
Q501, 502
Q503
Q504, 505
Q506
Q507, 508
R (X) OUT 1-63 → MB, 11-17
G (X) OUT 1-61 → MB, 11-?
B (X) OUT 1-59 → MB, 11-19
R
G
B
(0.7Vp-p, 0Vdc)
Q509, 510
IC500, 501
G PEAK DET.
G PEAK OUT 1-18 → AT, 1-74
AT, 1-46 → 1-26 PEAK RESET IN
AT, 1-45 → 1-25 WINDOW IN
DA, 1-69 → 1-70 R-Y (X) IN
Q410, 441
Q412 BUFF
Q413 BUFF
IC410
Q414 BUFF
VF R-Y (X) OUT 1-75 → VF, 1-A9
DA, 1-67 → 1-68 B-Y (X) IN
Q420, 421
Q422 BUFF
Q423 BUFF
IC420
Q424 BUFF
VF B-Y (X) OUT 1-74 → VF, 1-B9
SG, 1-36 → 1-48 N/P IN
Q352, 354
N/P OUT 1-47 → VF, 1-B3
CN, 1-19 → 1-82 UNREG
Q701, 703 TALLY DRIVE
+9.3V
TALLY OUT 1-27 → VF, 1-B5
AT, 1-58 → 1-29 TALLY ON IN
702
MB, 12-18 → 1-31 REC TALLY IN
IC701 (1/2) COMP
IC701 (2/2) COMP
REC TALLY OUT 1-30 → AT, 1-57
VTR RESET OUT 1-28 → AT, 1-53

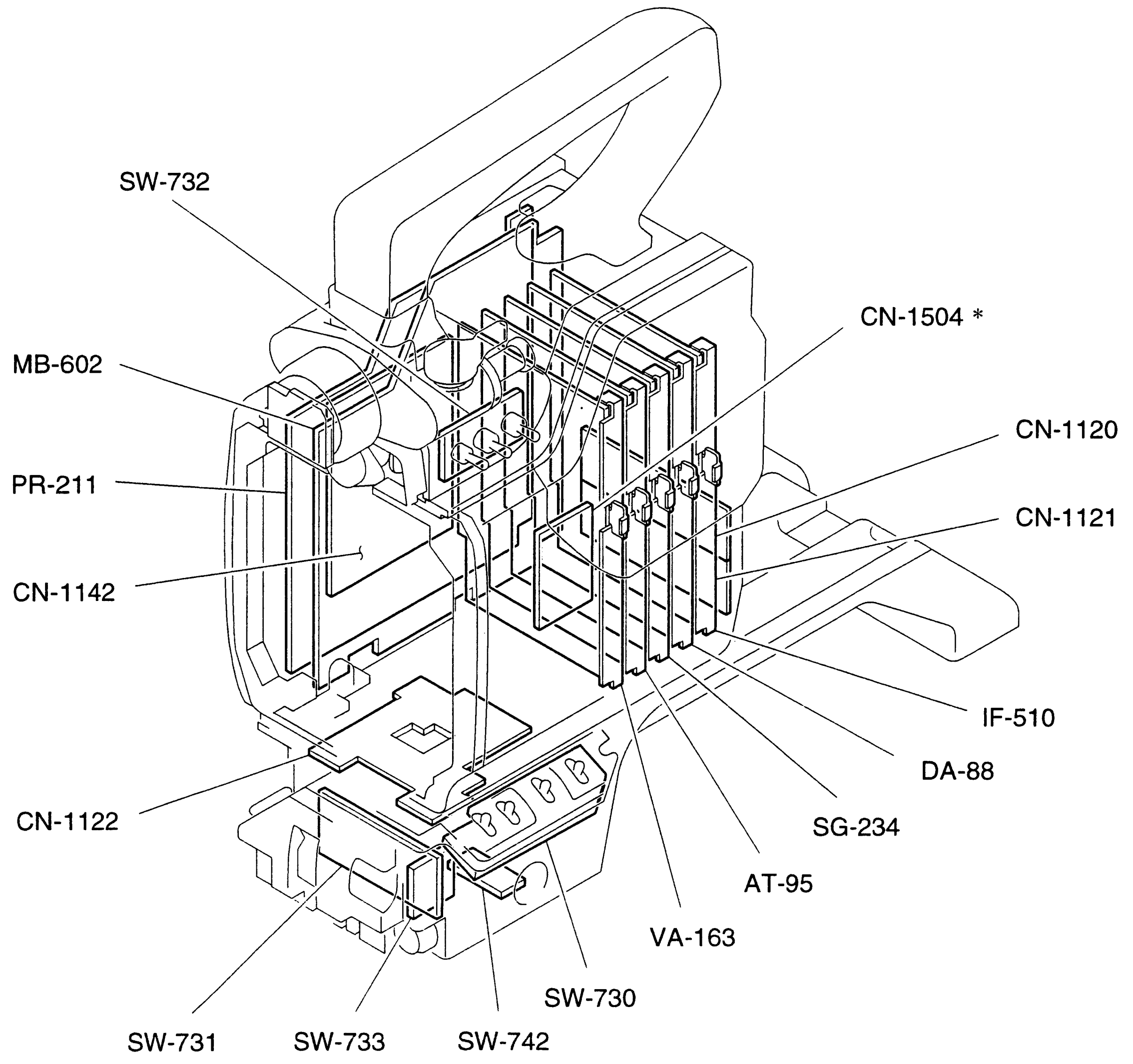
IF-510 BLOCK

BVP-550

BVP550-IF510BLOCK#1/M

Section 8
Schematic Diagrams

LOCATION OF PRINTED CIRCUIT BOARDS


SW-732
MB-602
PR-211
CN-1142
CN-1122
SW-731
SW-733
SW-742
SW-730
VA-163
AT-95
SG-234
DA-88
IF-510
CN-1121
CN-1120
CN-1504 *

* Serial No. 16371 and Higher

VA-163 (1/2)

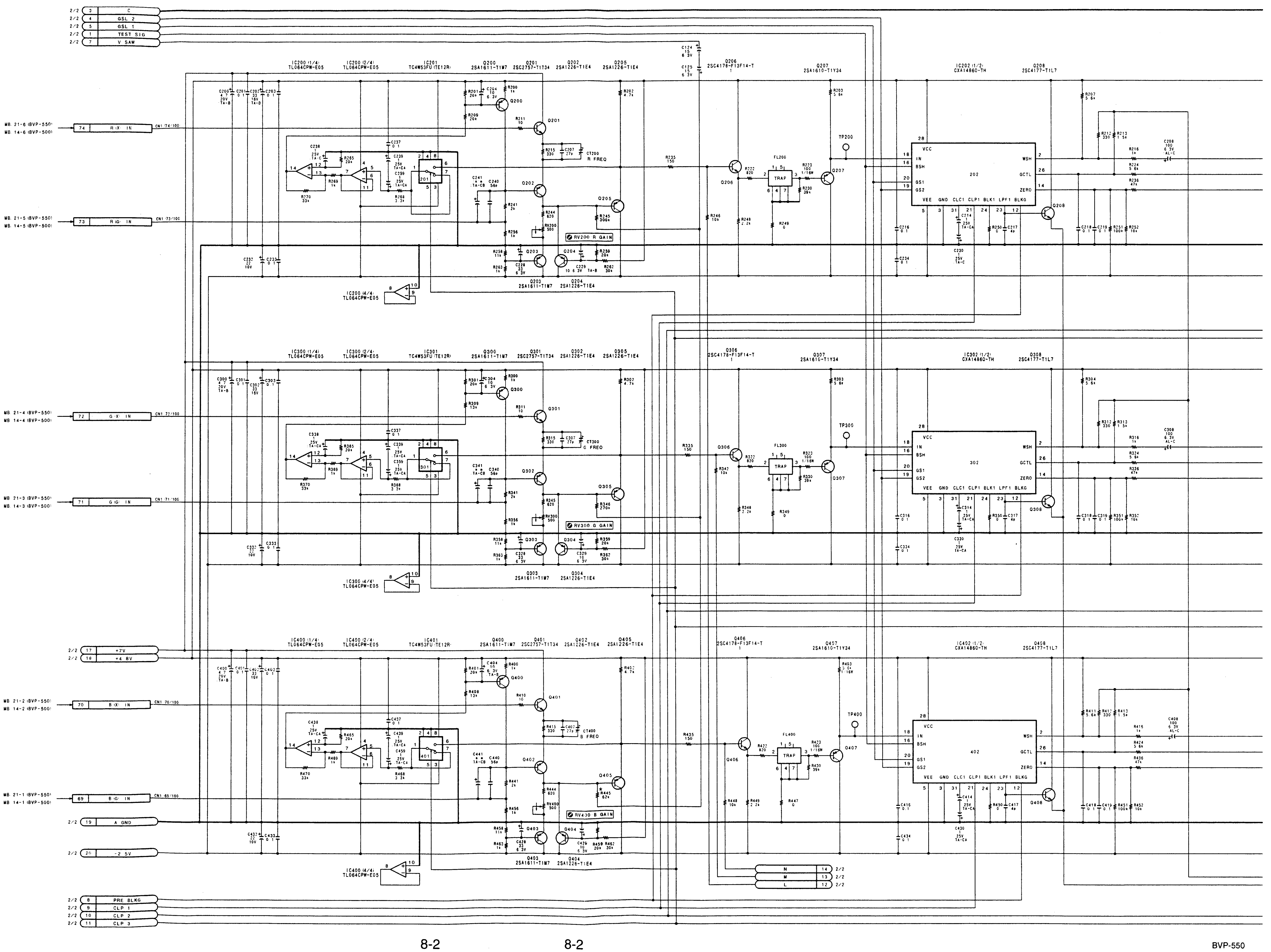
VA-163 BOARD

VA-163 (1-657-438-21)

*: B SIDE

CN1	C-1
CT200	B-4
CT300	D-4
CT400	F-4
* D1	A-3
* D2	A-2
* D3	A-2
* D4	A-3
* D5	B-3
D7	B-3
* D8	F-3
* D9	F-3
* D10	F-3
FL200	C-3
FL300	D-3
FL400	E-3
IC1	A-3
IC3	B-2
IC5	B-3
IC6	B-2
* IC7	B-3
* IC8	F-4
IC9	F-4
IC10	F-2
IC11	F-2
IC12	F-2
IC13	F-2
IC14	F-2
IC15	F-3
IC16	G-3
* IC17	G-3
IC18	G-2
* IC19	G-3
IC20	G-2
IC21	G-1
IC22	B-4
IC23	B-3
IC24	G-1
IC25	F-1
IC26	F-1
IC27	F-1
IC200	C-4
* IC201	C-3
IC202	C-2
* IC203	B-2
* IC204	B-1
IC300	D-4
* IC301	D-3
IC302	D-2
* IC303	C-2
* IC304	C-1
IC400	E-4
* IC401	E-3
IC402	E-2
* IC403	D-2
* IC404	E-1
L1	A-2
L2	A-3
* Q1	A-2
* Q2	A-2
* Q3	A-3
Q4	B-3
Q5	A-3
* Q7	A-3
Q10	A-4
Q11	A-4
Q12	A-4
Q13	A-4
Q14	A-4
* Q200	B-4
* Q201	B-4
* Q202	C-4
* Q203	C-4
* Q204	C-4
* Q205	C-3
Q206	B-3
* Q207	C-3
* Q208	C-3
Q209	B-2
Q210	C-2
Q211	B-2
Q212	C-2
* Q213	C-1
* Q214	C-1
* Q215	C-2
Q216	C-2
Q217	C-1
* Q218	B-1
Q219	C-1
Q220	C-1
* Q300	C-4
* Q301	C-4
* Q302	D-4
* Q303	D-4
* Q304	D-4
* Q305	D-3
Q306	D-3
* Q307	D-3
* Q308	D-3
Q309	D-2
Q310	D-2
Q311	D-2
Q312	D-2
* Q313	D-1
* Q314	D-1
* Q315	D-2
Q316	D-2
Q317	D-1
* Q318	C-1
Q319	D-1
Q320	D-1
* Q400	D-4
* Q401	E-4
* Q402	E-4
* Q403	F-4
* Q404	E-4
* Q405	E-3
Q406	E-3
* Q407	E-3
* Q408	E-3
Q409	E-2
Q410	E-2
Q411	E-2
Q412	E-2
* Q413	E-1
* Q414	E-1
* Q415	E-2
Q416	E-2
Q417	E-1
* Q418	E-1
Q419	E-1
Q420	E-1
RV50	B-4
RV200	C-4
RV300	D-4
RV400	F-4
TP200	D-4
TP300	E-4
TP400	F-4

BVP-550 (SY)



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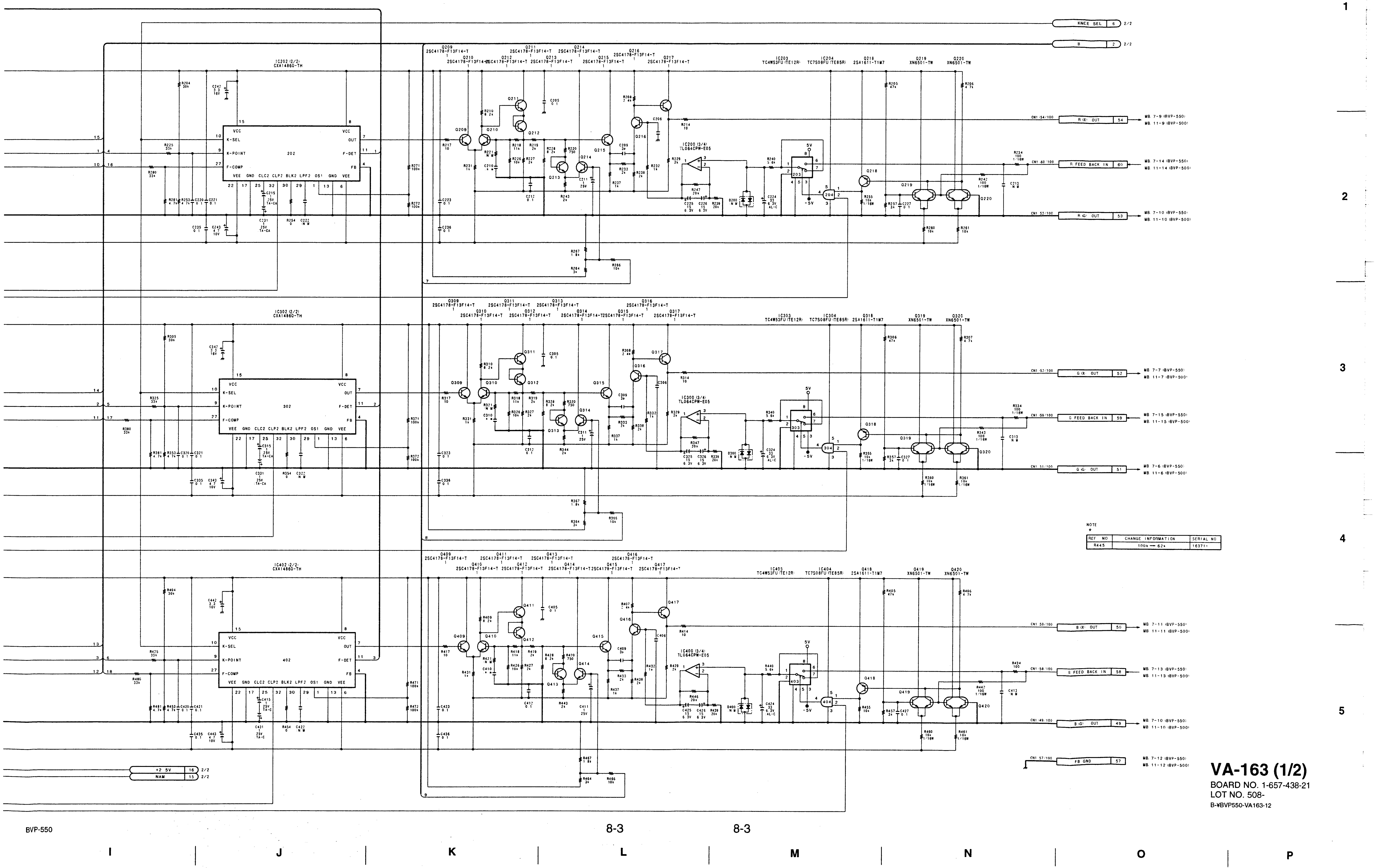
A
B
C
D
E
F
G
H
C
GSL 2
GSL 1
TEST SIG
V SAW
R(X) IN
R(G) IN
G(X) IN
G(G) IN
B(X) IN
B(G) IN
+7V
+4.8V
A GND
-2.5V
PRE BLKG
CLP 1
CLP 2
CLP 3
N
M
L
IC200 (1/4) TL064CPW-E05
IC200 (2/4) TL064CPW-E05
IC200 (4/4) TL064CPW-E05
IC201 TC4W53FU(TE12R)
IC202 (1/2) CXA1486Q-TH
IC300 (1/4) TL064CPW-E05
IC300 (2/4) TL064CPW-E05
IC300 (4/4) TL064CPW-E05
IC301 TC4W53FU(TE12R)
IC302 (1/2) CXA1486Q-TH
IC400 (1/4) TL064CPW-E05
IC400 (2/4) TL064CPW-E05
IC400 (4/4) TL064CPW-E05
IC401 TC4W53FU(TE12R)
IC402 (1/2) CXA1486Q-TH
FL200 TRAP
FL300 TRAP
FL400 TRAP
TP200
TP300
TP400
RV200 R GAIN
RV300 G GAIN
RV400 B GAIN
CT200 R FREQ
CT300 G FREQ
CT400 B FREQ
VCC IN BSH GS1 GS2 WSH GCTL ZERO
VEE GND CLC1 CLP1 BLK1 LPF1 BLKG

8-2


IC202 (2/2) CXA1486Q-TH
IC302 (2/2) CXA1486Q-TH
IC402 (2/2) CXA1486Q-TH
VCC
K-SEL
K-POINT
F-COMP
OUT
F-DET
FB
VEE GND CLC2 CLP2 BLK2 LPF2 OS1 GND VEE
202
302
402
IC200 (3/4) TL064CPW-E05
IC300 (3/4) TL064CPW-E05
IC400 (3/4) TL064CPW-E05
IC203 TC4W53FU (TE12R)
IC204 TC7S08FU (TE85R)
IC303 TC4W53FU (TE12R)
IC304 TC7S08FU (TE85R)
IC403 TC4W53FU (TE12R)
IC404 TC7S08FU (TE85R)
Q218 2SA1611-T1M7
Q219 XN6501-TW
Q220 XN6501-TW
Q318 2SA1611-T1M7
Q319 XN6501-TW
Q320 XN6501-TW
Q418 2SA1611-T1M7
Q419 XN6501-TW
Q420 XN6501-TW
2SC4178-F13F14-T
5V
-5V
KNEE SEL 6 2/2
B 2 2/2
CN1 54/100 R (X) OUT 54 MB. 7-9 (BVP-550) MB. 11-9 (BVP-500)
CN1 60/100 R FEED BACK IN 60 MB. 7-14 (BVP-550) MB. 11-14 (BVP-500)
CN1 53/100 R (G) OUT 53 MB. 7-10 (BVP-550) MB. 11-10 (BVP-500)
CN1 52/100 G (X) OUT 52 MB. 7-7 (BVP-550) MB. 11-7 (BVP-500)
CN1 59/100 G FEED BACK IN 59 MB. 7-15 (BVP-550) MB. 11-15 (BVP-500)
CN1 51/100 G (G) OUT 51 MB. 7-6 (BVP-550) MB. 11-6 (BVP-500)
CN1 50/100 B (X) OUT 50 MB. 7-11 (BVP-550) MB. 11-11 (BVP-500)
CN1 58/100 B FEED BACK IN 58 MB. 7-13 (BVP-550) MB. 11-13 (BVP-500)
CN1 49/100 B (G) OUT 49 MB. 7-10 (BVP-550) MB. 11-10 (BVP-500)
CN1 57/100 FB GND 57 MB. 7-12 (BVP-550) MB. 11-12 (BVP-500)
+2.5V 16 2/2
NAM 15 2/2
1
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3
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J
K
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NOTE
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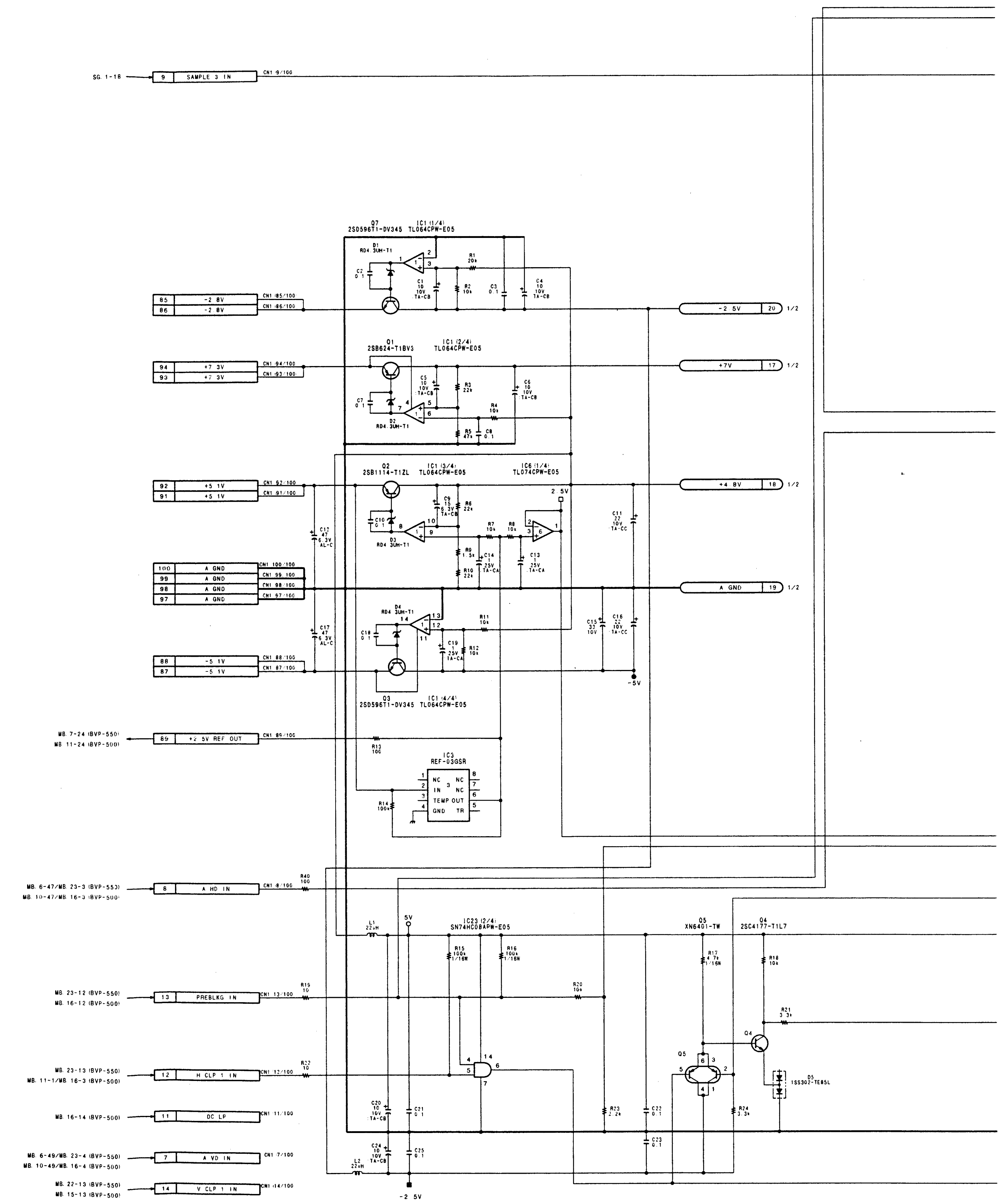
REF NO	CHANGE INFORMATION	SERIAL NO
R445	100k → 62k	16371-

VA-163 (1/2)

BOARD NO. 1-657-438-21
LOT NO. 508-
B-¥BVP550-VA163-12

VA-163 (2/2)

BVP-550 (SY)


SG 1-18
9 SAMPLE 3 IN
CN1 9/100
Q7
2SD596T1-DV345
IC1 (1/4)
TL064CPW-E05
D1
RD4.3UH-T1
C2 0.1
C1 10 10V TA-CB
R1 20k
R2 10k
C3 0.1
C4 10 10V TA-CB
85 -2.8V
86 -2.8V
CN1 85/100
CN1 86/100
-2.5V 20 1/2
Q1
2SB624-T1BV3
IC1 (2/4)
TL064CPW-E05
94 +7.3V
93 +7.3V
CN1 94/100
CN1 93/100
+7V 17 1/2
C5 10 10V TA-CB
R3 22k
C6 10 10V TA-CB
C7 0.1
R4 10k
D2
RD4.3UH-T1
R5 47k
C8 0.1
Q2
2SB1114-T1ZL
IC1 (3/4)
TL064CPW-E05
IC6 (1/4)
TL074CPW-E05
2.5V
92 +5.1V
91 +5.1V
CN1 92/100
CN1 91/100
+4.8V 18 1/2
C9 15 6.3V TA-CB
R6 22k
C10 0.1
D3
RD4.3UH-T1
R7 10k
R8 10k
R9 1.5k
R10 22k
C14 1 25V TA-CA
C13 1 25V TA-CA
C11 22 10V TA-CC
C12 47 6.3V AL-C
100 A GND
99 A GND
98 A GND
97 A GND
CN1 100/100
CN1 99/100
CN1 98/100
CN1 97/100
A GND 19 1/2
D4
RD4.3UH-T1
C18 0.1
R11 10k
C19 1 25V TA-CA
R12 10k
C15 33 10V
C16 22 10V TA-CC
C17 47 6.3V AL-C
88 -5.1V
87 -5.1V
CN1 88/100
CN1 87/100
-5V
Q3
2SD596T1-DV345
IC1 (4/4)
TL064CPW-E05
MB 7-24 (BVP-550)
MB 11-24 (BVP-500)
89 +2.5V REF OUT
CN1 89/100
R13 100
IC3
REF-03GSR
NC
IN
TEMP OUT
GND
TR
R14 100k
MB 6-47/MB 23-3 (BVP-550)
MB 10-47/MB 16-3 (BVP-500)
8 A HD IN
CN1 8/100
R40 100
L1 22μH
5V
IC23 (2/4)
SN74HC08APW-E05
R15 100k 1/16W
R16 100k 1/16W
Q5
XN6401-TW
Q4
2SC4177-T1L7
R17 4.7k 1/16W
R18 10k
MB 23-12 (BVP-550)
MB 16-12 (BVP-500)
13 PREBLKG IN
CN1 13/100
R19 10
R20 10k
R21 3.3k
D5
1SS302-TE85L
MB 23-13 (BVP-550)
MB 11-1/MB 16-3 (BVP-500)
12 H CLP 1 IN
CN1 12/100
R22 10
MB 16-14 (BVP-500)
11 DC LP
CN1 11/100
C20 10 10V TA-CB
C21 0.1
R23 2.2k
C22 0.1
R24 3.3k
C23 0.1
MB 6-49/MB 23-4 (BVP-550)
MB 10-49/MB 16-4 (BVP-500)
7 A VD IN
CN1 7/100
C24 10 10V TA-CB
C25 0.1
L2 22μH
MB 22-13 (BVP-550)
MB 15-13 (BVP-500)
14 V CLP 1 IN
CN1 14/100
-2.5V

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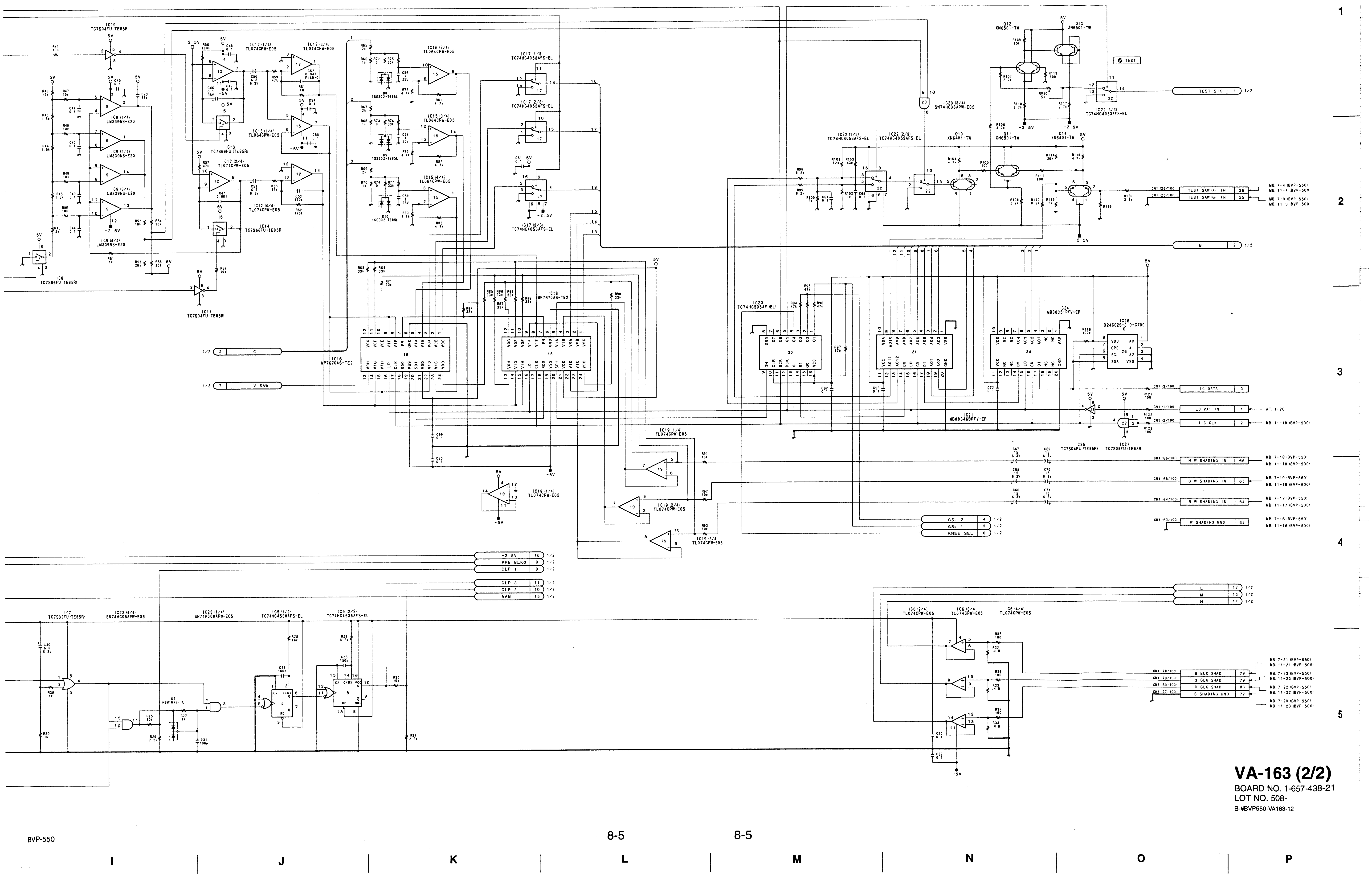
IC10 TC7S04FU(TE85R)
IC9 (1/4) LM339NS-E20
IC9 (2/4) LM339NS-E20
IC9 (3/4) LM339NS-E20
IC9 (4/4) LM339NS-E20
IC8 TC7S66FU(TE85R)
IC11 TC7S04FU(TE85R)
IC12 (1/4) TL074CPM-E05
IC12 (3/4) TL074CPM-E05
IC12 (2/4) TL074CPM-E05
IC12 (4/4) TL074CPM-E05
IC13 TC7S66FU(TE85R)
IC14 TC7S66FU(TE85R)
IC15 (1/4) TL064CPM-E05
IC15 (2/4) TL064CPM-E05
IC15 (3/4) TL064CPM-E05
IC15 (4/4) TL064CPM-E05
1SS302-TE85L
IC17 (1/3) TC74HC4053AFS-EL
IC17 (2/3) TC74HC4053AFS-EL
IC17 (3/3) TC74HC4053AFS-EL
IC16 MP7670AS-TE2
IC18 MP7670AS-TE2
IC19 (1/4) TL074CPM-E05
IC19 (2/4) TL074CPM-E05
IC19 (3/4) TL074CPM-E05
IC19 (4/4) TL074CPM-E05
IC20 TC74HC595AF(EL)
IC21 MB88346BPFV-EF
IC22 (1/3) TC74HC4053AFS-EL
IC22 (2/3) TC74HC4053AFS-EL
IC22 (3/3) TC74HC4053AFS-EL
IC23 (3/4) SN74HC08APW-E05
IC24 MB88351PFV-ER
IC25 TC7S04FU(TE85R)
IC26 X24C02S-3.0-C700
IC27 TC7S08FU(TE85R)
Q10 XN6401-TW
Q11 XN6501-TW
Q12 XN6501-TW
Q13 XN6501-TW
Q14 XN6401-TW
TEST
TEST SIG 1 1/2
TEST SAW(X) IN 26 MB 7-4 (BVP-550) MB 11-4 (BVP-500)
TEST SAW(G) IN 25 MB 7-3 (BVP-550) MB 11-3 (BVP-500)
B 2 1/2
1/2 3 C
1/2 7 V SAW
IIC DATA 3
LD(VA) IN 1 AT 1-20
IIC CLK 2 MB 11-18 (BVP-500)
R W SHADING IN 66 MB 7-18 (BVP-550) MB 11-18 (BVP-500)
G W SHADING IN 65 MB 7-19 (BVP-550) MB 11-19 (BVP-500)
B W SHADING IN 64 MB 7-17 (BVP-550) MB 11-17 (BVP-500)
W SHADING GND 63 MB 7-16 (BVP-550) MB 11-16 (BVP-500)
GSL 2 4 1/2
GSL 1 5 1/2
KNEE SEL 6 1/2
+2.5V 16 1/2
PRE BLKG 8 1/2
CLP 1 9 1/2
CLP 3 11 1/2
CLP 2 10 1/2
NAM 15 1/2
L 12 1/2
M 13 1/2
N 14 1/2
IC7 TC7S32FU(TE85R)
IC23 (4/4) SN74HC08APW-E05
IC23 (1/4) SN74HC08APW-E05
IC5 (1/2) TC74HC4538AFS-EL
IC5 (2/2) TC74HC4538AFS-EL
D7 HSM107S-TL
IC6 (2/4) TL074CPM-E05
IC6 (3/4) TL074CPM-E05
IC6 (4/4) TL074CPM-E05
R BLK SHAD 78 MB 7-21 (BVP-550) MB 11-21 (BVP-500)
G BLK SHAD 79 MB 7-23 (BVP-550) MB 11-23 (BVP-500)
R BLK SHAD 80 MB 7-22 (BVP-550) MB 11-22 (BVP-500)
B SHADING GND 77 MB 7-20 (BVP-550) MB 11-20 (BVP-500)
5V
-5V
-2.5V
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VA-163 (2/2)

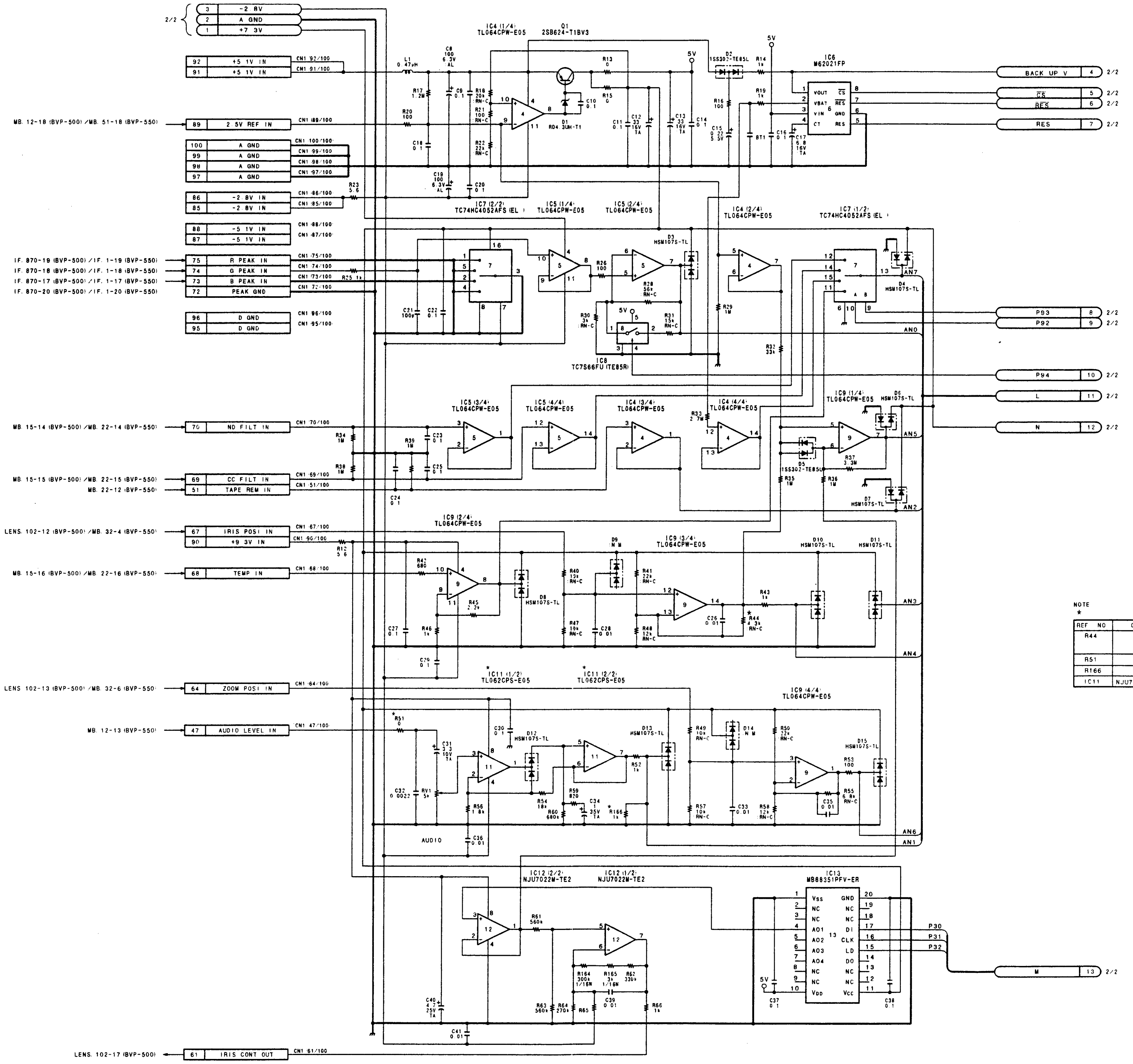
BOARD NO. 1-657-438-21
LOT NO. 508-
B-¥BVP550-VA163-12

AT-95 BOARD

AT-95 (1-657-448-21)

*: B SIDE

	BT1	B-4
	CNI36	F-2
	CN1	C-1
	D1	A-2
	D2	B-4
*	D3	A-2
*	D4	A-2
*	D5	A-3
*	D6	B-3
*	D7	B-3
*	D8	A-3
*	D10	A-3
*	D11	A-3
*	D12	A-4
*	D13	B-4
*	D15	B-3
*	D16	G-4
*	D17	G-4
*	D18	G-4
*	D19	G-4
*	D20	G-1
*	D21	C-2
*	D22	G-3
	IC1	F-1
*	IC2	G-2
*	IC3	G-1
*	IC4	A-2
*	IC5	B-2
*	IC6	B-4
*	IC7	B-2
*	IC8	A-2
*	IC9	B-3
*	IC11	B-4
*	IC12	C-2
*	IC13	B-2
*	IC14	C-3
*	IC15	D-4
	IC16	D-2
*	IC17	D-4
*	IC18	D-4
*	IC19	D-4
*	IC20	D-4
*	IC21	D-4
*	IC22	D-4
*	IC23	E-3
*	IC24	E-3
	IC25	D-4
*	IC26	E-2
	IC27	E-4
	IC28	F-4
*	IC29	G-3
*	IC30	G-2
*	IC31	F-2
*	IC32	B-2
	IC33	B-2
	IC34	C-2
	IC35	C-4
*	IC37	E-4
	IC38	C-3
*	IC39	E-4
*	IC40	D-2
*	IC41	C-3
*	IC42	D-3
*	IC43	D-3
*	IC44	D-3
*	IC45	D-2
*	IC46	G-4
	IC47	E-2
*	IC48	G-2
	L1	B-1
	L2	F-1
	Q1	A-2
*	Q2	F-2
*	Q3	B-1
*	Q4	C-1
*	Q5	B-1
*	Q6	B-1
	RV1	C-3
	S1	E-3


-2.8V
A GND
+7.3V
+5.1V IN
2.5V REF IN
A GND
-2.8V IN
-5.1V IN
R PEAK IN
G PEAK IN
B PEAK IN
PEAK GND
D GND
ND FILT IN
CC FILT IN
TAPE REM IN
IRIS POSI IN
+9.3V IN
TEMP IN
ZOOM POSI IN
AUDIO LEVEL IN
IRIS CONT OUT
BACK UP V
RES
P93
P92
P94
L
N
M
IC4 (1/4) TL064CPW-E05
Q1 2SB624-T1BV3
IC6 M62021FP
IC7 (2/2) TC74HC4052AFS(EL)
IC5 (1/4) TL064CPW-E05
IC5 (2/4) TL064CPW-E05
IC4 (2/4) TL064CPW-E05
IC7 (1/2) TC74HC4052AFS(EL)
IC8 TC7S66FU(TE85R)
IC9 (1/4) TL064CPW-E05
IC9 (2/4) TL064CPW-E05
IC9 (3/4) TL064CPW-E05
IC9 (4/4) TL064CPW-E05
IC11 (1/2) TL062CPS-E05
IC11 (2/2) TL062CPS-E05
IC12 (2/2) NJU7022M-TE2
IC12 (1/2) NJU7022M-TE2
IC13 MB88351PFV-ER
AUDIO
AN0
AN1
AN2
AN3
AN4
AN5
AN6
AN7
2/2

NOTE
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REF NO	CHANGE INFORMATION	SERIAL NO.
R44	6.8k → 4.3k	15001- 50141-
R51	1k → 0	15241-
R166	ADD	
IC11	NJU7022M-TE2 → TL062CPS	

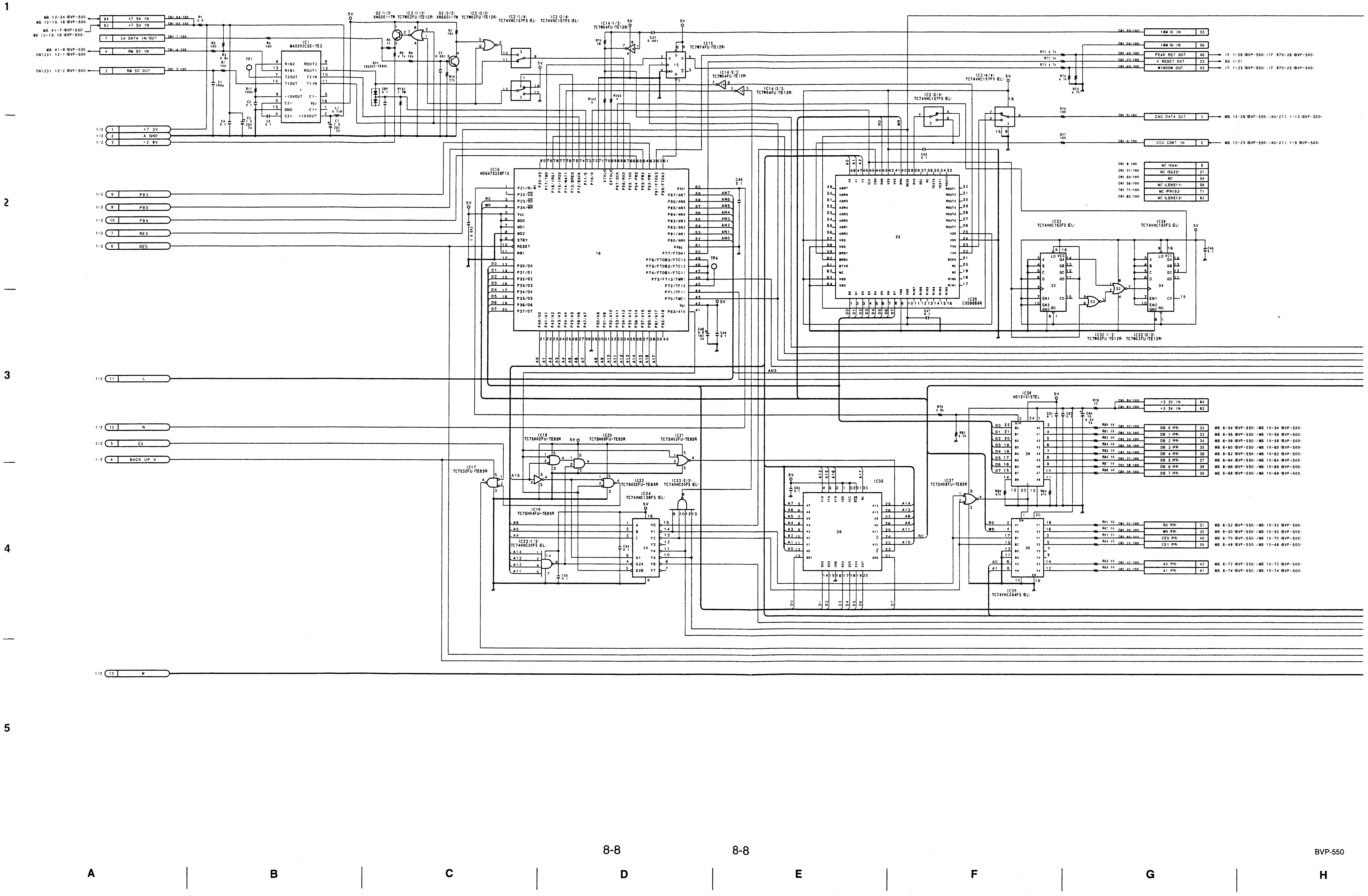
AT-95 (1/2)

BOARD NO. 1-657-448-21
LOT NO. 508-
B-¥BVP550-AT95-12

AT-95 (2/2)

AT-95 (2/2)

BVP-550 (SY)



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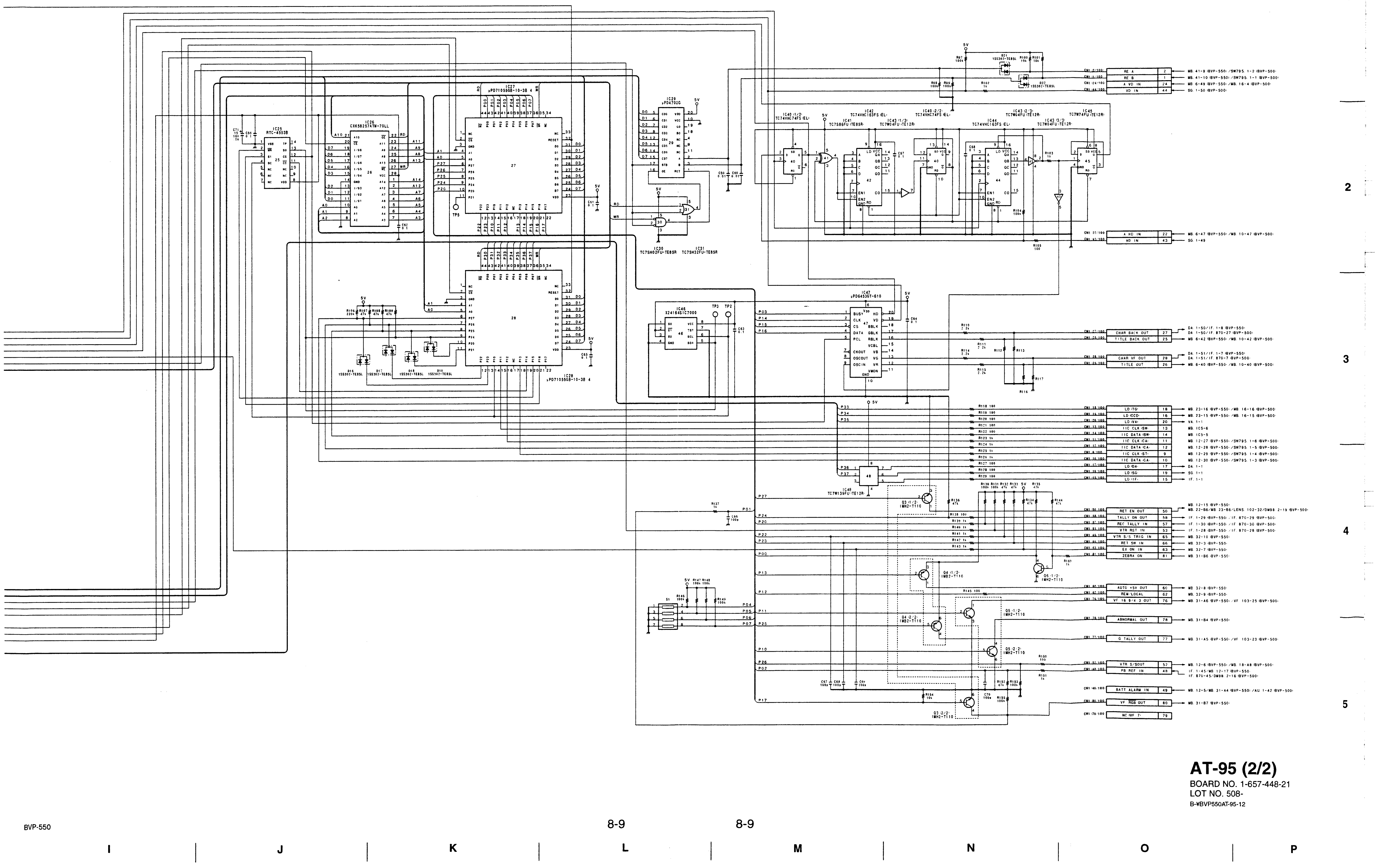
A
B
C
D
E
F
G
H
MB. 12-24 (BVP-550)
MB. 12-15, 16 (BVP-500)
MB. 41-7 (BVP-550)
MB 12-15, 16 (BVP-500)
MB. 41-8 (BVP-550)
CN1231. 12-1 (BVP-500)
CN1231. 12-2 (BVP-500)
94 +7.5V IN
93 +7.5V IN
7 CA DATA IN/OUT
4 RM SD IN
3 RM SD OUT
IC1
MAX202CSE-TE2
RIN2
RIN1
T2OUT
T1OUT
-10VOUT
C2-
GND
C2+
ROUT2
ROUT1
T2IN
T1IN
C1-
Vcc
C1+
+10VOUT
TP1
D20
1SS302-TE85L
1/2 1 +7.3V
1/2 2 A GND
1/2 3 -2.8V
1/2 9 P92
1/2 8 P93
1/2 10 P94
1/2 7 RES
1/2 6 RES
1/2 11 L
1/2 12 N
1/2 5 CS
1/2 4 BACK UP V
1/2 13 M
5V
Q2 (1/2) XN6501-TW
IC2 (1/2) TC7W02FU (TE12R)
Q2 (2/2) XN6501-TW
IC2 (2/2) TC7W02FU (TE12R)
IC3 (1/4) TC74VHC157FS (EL)
IC3 (2/4) TC74VHC157FS (EL)
IC14 (1/3) TC7W04FU (TE12R)
IC14 (2/3) TC7W04FU (TE12R)
IC14 (3/3) TC7W04FU (TE12R)
IC15 TC7W74FU (TE12R)
IC3 (3/4) TC74VHC157FS (EL)
IC3 (4/4) TC74VHC157FS (EL)
IC16
HD6475328F10
16
TP4
AN3
IC35
CXD8889R
35
IC33
TC74VHC163FS (EL)
IC34
TC74VHC163FS (EL)
IC32 (1/2) TC7W02FU (TE12R)
IC32 (2/2) TC7W02FU (TE12R)
CN1 (55/100) 18M (X) IN 55
CN1 (56/100) 18M (G) IN 56
CN1 (46/100) PEAK RST OUT 46
CN1 (23/100) V RESET OUT 23
CN1 (45/100) WINDOW OUT 45
IF. 1-26 (BVP-550) / IF. 870-26 (BVP-500)
SG. 1-21
IF. 1-25 (BVP-550) / IF. 870-25 (BVP-500)
CN1 (5/100) CHU DATA OUT 5
MB. 12-26 (BVP-550) / AU-211. 1-13 (BVP-500)
CN1 (6/100) CCU CONT IN 6
MB. 12-25 (BVP-550) / AU-211. 1-9 (BVP-500)
CN1 (8/100) NC (VA4) 8
CN1 (21/100) NC (SG22) 21
CN1 (54/100) NC 54
CN1 (59/100) NC (LENS11) 59
CN1 (71/100) NC (PR102) 71
CN1 (82/100) NC (LENS12) 82
IC18 TC7SH02FU-TE85R
IC20 TC7SH08FU-TE85R
IC21 TC7SH02FU-TE85R
IC17 TC7S32FU (TE85R)
IC19 TC7SH04FU-TE85R
IC22 TC7SH32FU-TE85R
IC23 (2/2) TC74VHC20FS (EL)
IC23 (1/2) TC74VHC20FS (EL)
IC24 TC74VHC138FS (EL)
IC36
36
IC37 TC7SH08FU-TE85R
IC38 HD151015TEL
38
IC39 TC74VHC244FS (EL)
39
CN1 (84/100) +3.3V IN 84
CN1 (83/100) +3.3V IN 83
DB 0 (PR) 32 MB. 6-54 (BVP-550) / MB. 10-54 (BVP-500)
DB 1 (PR) 33 MB. 6-56 (BVP-550) / MB. 10-56 (BVP-500)
DB 2 (PR) 34 MB. 6-58 (BVP-550) / MB. 10-58 (BVP-500)
DB 3 (PR) 35 MB. 6-60 (BVP-550) / MB. 10-60 (BVP-500)
DB 4 (PR) 36 MB. 6-62 (BVP-550) / MB. 10-62 (BVP-500)
DB 5 (PR) 37 MB. 6-64 (BVP-550) / MB. 10-64 (BVP-500)
DB 6 (PR) 38 MB. 6-66 (BVP-550) / MB. 10-66 (BVP-500)
DB 7 (PR) 39 MB. 6-68 (BVP-550) / MB. 10-68 (BVP-500)
RD (PR) 31 MB. 6-52 (BVP-550) / MB. 10-52 (BVP-500)
WR (PR) 30 MB. 6-50 (BVP-550) / MB. 10-50 (BVP-500)
CE0 (PR) 40 MB. 6-70 (BVP-550) / MB 10-70 (BVP-500)
CE1 (PR) 29 MB. 6-48 (BVP-550) / MB. 10-48 (BVP-500)
A0 (PR) 42 MB. 6-72 (BVP-550) / MB. 10-72 (BVP-500)
A1 (PR) 41 MB. 6-74 (BVP-550) / MB. 10-74 (BVP-500)

8-8


IC25 RTC-4553B
IC26 CXK58257ATM-70LL
IC27 μPD71055GB-10-3B 4
IC28 μPD71055GB-10-3B 4
IC29 μPD4702G
IC30 TC7SH02FU-TE85R
IC31 TC7SH32FU-TE85R
IC40 (1/2) TC74VHC74FS (EL)
IC41 TC7S86FU (TE85R)
IC42 TC74VHC163FS (EL)
IC43 (1/3) TC7W04FU (TE12R)
IC40 (2/2) TC74VHC74FS (EL)
IC44 TC74VHC163FS (EL)
IC43 (2/3) TC7W04FU (TE12R)
IC43 (3/3) TC7W04FU (TE12R)
IC45 TC7W74FU (TE12R)
IC46 X24164SIC7000
IC47 μPD6453GT-610
IC48 TC7W139FU (TE12R)
TP5
TP3
TP2
5V
D16 1SS302-TE85L
D17 1SS302-TE85L
D18 1SS302-TE85L
D19 1SS302-TE85L
D21 1SS302-TE85L
D22 1SS302-TE85L
Q3 (1/2) IMH2-T110
Q3 (2/2) IMH2-T110
Q4 (1/2) IMB2-T110
Q4 (2/2) IMB2-T110
Q5 (1/2) IMH2-T110
Q5 (2/2) IMH2-T110
Q6 (1/2) IMH2-T110
CN1 (2/100) RE A 2 MB. 41-9 (BVP-550) /SW795. 1-2 (BVP-500)
CN1 (1/100) RE B 1 MB. 41-10 (BVP-550) /SW795. 1-1 (BVP-500)
CN1 (24/100) A VD IN 24 MB. 6-49 (BVP-550) /MB. 16-4 (BVP-500)
CN1 (44/100) VD IN 44 SG. 1-50 (BVP-500)
CN1 (22/100) A HD IN 22 MB. 6-47 (BVP-550) /MB. 10-47 (BVP-500)
CN1 (43/100) HD IN 43 SG. 1-49
CN1 (27/100) CHAR BACK OUT 27 DA. 1-50/IF. 1-8 (BVP-550) DA. 1-50/IF. 870-27 (BVP-500)
CN1 (25/100) TITLE BACK OUT 25 MB. 6-42 (BVP-550) /MB. 10-42 (BVP-500)
CN1 (28/100) CHAR VF OUT 28 DA. 1-51/IF. 1-7 (BVP-550) DA. 1-51/IF. 870-7 (BVP-500)
CN1 (26/100) TITLE OUT 26 MB. 6-40 (BVP-550) /MB. 10-40 (BVP-500)
CN1 (18/100) LD (TG) 18 MB. 23-16 (BVP-550) /MB. 16-16 (BVP-500)
CN1 (16/100) LD (CCD) 16 MB. 23-15 (BVP-550) /MB. 16-15 (BVP-500)
CN1 (20/100) LD (VA) 20 VA. 1-1
CN1 (13/100) IIC CLK (SW) 13 MB. IC5-6
CN1 (14/100) IIC DATA (SW) 14 MB. IC5-5
CN1 (11/100) IIC CLK (CA) 11 MB. 12-27 (BVP-550) /SW795. 1-6 (BVP-500)
CN1 (12/100) IIC DATA (CA) 12 MB. 12-28 (BVP-550) /SW795. 1-5 (BVP-500)
CN1 (9/100) IIC CLK (ST) 9 MB. 12-29 (BVP-550) /SW795. 1-4 (BVP-500)
CN1 (10/100) IIC DATA (CA) 10 MB. 12-30 (BVP-550) /SW795. 1-3 (BVP-500)
CN1 (17/100) LD (DA) 17 DA. 1-1
CN1 (19/100) LD (SG) 19 SG. 1-1
CN1 (15/100) LD (IF) 15 IF. 1-1
CN1 (50/100) RET EN OUT 50 MB. 12-15 (BVP-550) MB. 22-B6/MB. 23-B6/LENS. 102-32/DM98. 2-19 (BVP-500)
CN1 (58/100) TALLY ON OUT 58 IF. 1-29 (BVP-550) /IF. 870-29 (BVP-500)
CN1 (57/100) REC TALLY IN 57 IF. 1-30 (BVP-550) /IF. 870-30 (BVP-500)
CN1 (53/100) VTR RST IN 53 IF. 1-28 (BVP-550) /IF. 870-28 (BVP-500)
CN1 (65/100) VTR S/S TRIG IN 65 MB. 32-10 (BVP-550)
CN1 (66/100) RET SW IN 66 MB. 32-3 (BVP-550)
CN1 (63/100) EX ON IN 63 MB. 32-7 (BVP-550)
CN1 (81/100) ZEBRA ON 81 MB. 31-B6 (BVP-550)
CN1 (60/100) AUTO +5V OUT 60 MB. 32-8 (BVP-550)
CN1 (62/100) REM/LOCAL 62 MB. 32-9 (BVP-550)
CN1 (76/100) VF 16 9/4 3 OUT 76 MB. 31-A6 (BVP-550) /VF 103-25 (BVP-500)
CN1 (78/100) ABNORMAL OUT 78 MB. 31-B4 (BVP-550)
CN1 (77/100) G TALLY OUT 77 MB. 31-A5 (BVP-550) /VF 103-23 (BVP-500)
CN1 (52/100) VTR S/SOUT 52 MB. 12-6 (BVP-550) /MB. 18-A8 (BVP-500)
CN1 (48/100) PB REF IN 48 IF. 1-45/MB 12-17 (BVP-550) IF. 870-45/DM98. 2-16 (BVP-500)
CN1 (49/100) BATT ALARM IN 49 MB. 12-5/MB. 31-A4 (BVP-550) /AU. 1-42 (BVP-500)
CN1 (80/100) VF RGB OUT 80 MB. 31-B7 (BVP-550)
CN1 (79/100) NC (VF 7) 79
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AT-95 (2/2)

BOARD NO. 1-657-448-21
LOT NO. 508-
B-¥BVP550AT-95-12

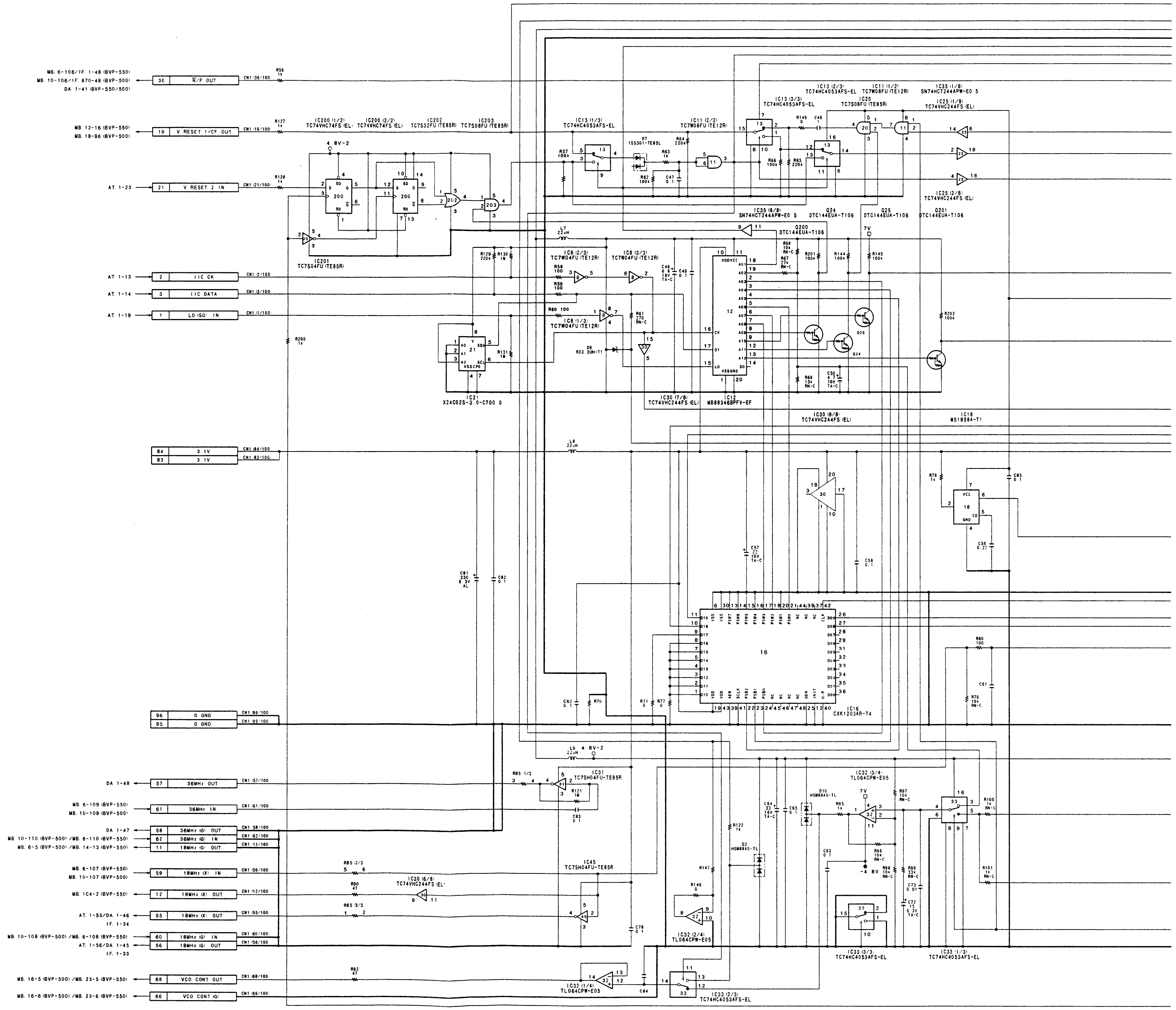
SG-234 BOARD

SG-234 (1-657-449-21)

*: B SIDE

CN1	C-1
D1	A-2
* D2	A-2
D3	E-2
* D4	A-1
D5	B-3
D6	B-4
* D7	D-3
D8	F-1
D10	C-2
D11	C-3
D12	A-3
* D13	D-1
D14	A-3
* D200	B-4
* D201	E-3
FL1	C-2
IC3	A-2
IC5	B-4
IC8	F-1
* IC11	D-3
IC12	F-1
IC13	D-3
IC16	F-2
* IC17	A-2
IC18	F-4
* IC20	D-3
* IC21	F-1
* IC22	F-3
IC24	F-4
IC25	E-2
IC30	E-2
* IC31	C-2
IC32	D-2
IC33	D-3
* IC34	D-4
IC35	D-4
IC36	C-4
IC37	C-3
IC38	D-3
* IC39	D-3
* IC40	C-3
IC41	D-3
IC42	D-2
* IC43	C-3
IC44	B-3
* IC45	D-2
IC46	A-3
* IC47	B-3
IC48	A-3
* IC200	D-1
* IC201	D-1
* IC202	D-1
* IC203	D-1
* IC204	A-4
* IC206	B-4
IC207	B-4
* L1	A-1
* L2	A-1
* L4	B-1
* L5	B-4
* L6	C-4
* L7	F-1
L8	B-2
L9	B-2
Q1	A-2
* Q2	A-2
* Q4	B-2
Q5	A-4
Q6	A-4
* Q7	B-4
Q8	A-4
* Q9	A-4
Q10	C-4
* Q11	A-4
* Q12	C-3
* Q14	C-3
Q15	C-4
* Q16	A-3
Q17	A-3
* Q18	C-4
* Q20	D-4
* Q21	A-3
Q22	B-3
Q23	G-4
* Q24	F-1
* Q25	F-1
Q26	D-3
* Q200	E-1
* Q201	F-2
Q202	A-4
Q203	A-4
Q204	B-4
* Q205	A-3
RB1	E-1
RB2	F-1
RB3	D-1
RB4	D-1
RB5	C-1
RB10	D-1

BVP-550 (SY)


N/P OUT
V RESET 1/CF OUT
V RESET 2 IN
IIC CK
IIC DATA
LD(SG) IN
3.1V
D GND
36MHz OUT
36MHz IN
36MHz (G) OUT
36MHz (G) IN
18MHz (G) OUT
18MHz (X) IN
18MHz (X) OUT
18MHz (G) IN
VCO CONT OUT
VCO CONT (G)
IC200 (1/2) TC74VHC74FS (EL)
IC200 (2/2) TC74VHC74FS (EL)
IC202 TC7S32FU (TE85R)
IC203 TC7S08FU (TE85R)
IC201 TC7S04FU (TE85R)
IC13 (1/3) TC74HC4053AFS-EL
IC11 (2/2) TC7W08FU (TE12R)
IC13 (2/3) TC74HC4053AFS-EL
IC13 (3/3) TC74HC4053AFS-EL
IC11 (1/2) TC7W08FU (TE12R)
IC20 TC7S08FU (TE85R)
IC35 (1/8) SN74HCT244APW-E0 5
IC25 (1/8) TC74VHC244FS (EL)
IC25 (2/8) TC74VHC244FS (EL)
IC35 (8/8) SN74HCT244APW-E0 5
Q24 DTC144EUA-T106
Q25 DTC144EUA-T106
Q201 DTC144EUA-T106
Q200 DTC144EUA-T106
IC8 (2/3) TC7W04FU (TE12R)
IC8 (3/3) TC7W04FU (TE12R)
IC8 (1/3) TC7W04FU (TE12R)
IC21 X24C02S-3.0-C700 D
IC30 (7/8) TC74VHC244FS (EL)
IC12 MB88346BPFV-EF
IC30 (8/8) TC74VHC244FS (EL)
IC18 M51958A-T1
IC16 CXK1203AR-T4
IC31 TC7SH04FU-TE85R
IC45 TC7SH04FU-TE85R
IC30 (6/8) TC74VHC244FS (EL)
IC32 (3/4) TL064CPW-E05
IC32 (2/4) TL064CPW-E05
IC32 (1/4) TL064CPW-E05
IC33 (3/3) TC74HC4053AFS-EL
IC33 (1/3) TC74HC4053AFS-EL
IC33 (2/3) TC74HC4053AFS-EL
4.8V-2
7V
-4.8V

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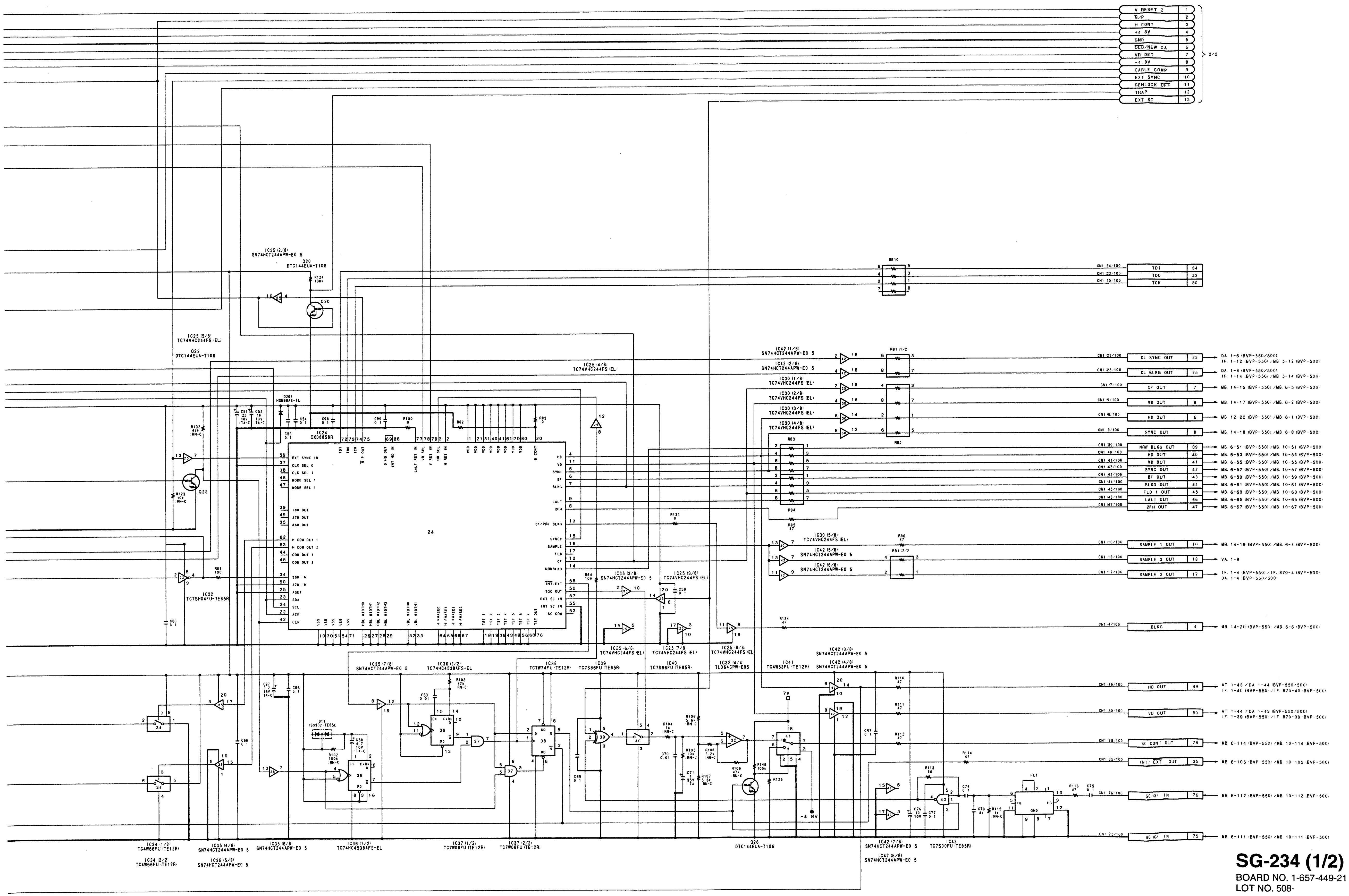
A | B | C | D | E | F | G | H


V RESET 2 1
N̄/P 2
H CONT 3
+4 8V 4
GND 5
O̅L̅D̅/NEW CA 6
VR DET 7
-4 8V 8
CABLE COMP 9
EXT SYNC 10
GENLOCK O̅F̅F̅ 11
TRAP 12
EXT SC 13
2/2
CN1 34/100 TD1 34
CN1 32/100 TDO 32
CN1 30/100 TCK 30
CN1 23/100 DL SYNC OUT 23 DA. 1-6 (BVP-550/500) IF. 1-12 (BVP-550) /MB 5-12 (BVP-500)
CN1 25/100 DL BLKG OUT 25 DA. 1-8 (BVP-550/500) IF. 1-14 (BVP-550) /MB 5-14 (BVP-500)
CN1 7/100 CF OUT 7 MB. 14-15 (BVP-550) /MB. 6-5 (BVP-500)
CN1 9/100 VD OUT 9 MB. 14-17 (BVP-550) /MB. 6-2 (BVP-500)
CN1 6/100 HD OUT 6 MB. 12-22 (BVP-550) /MB. 6-1 (BVP-500)
CN1 8/100 SYNC OUT 8 MB. 14-18 (BVP-550) /MB. 6-8 (BVP-500)
CN1 39/100 NRW BLKG OUT 39 MB. 6-51 (BVP-550) /MB. 10-51 (BVP-500)
CN1 40/100 HD OUT 40 MB. 6-53 (BVP-550) /MB. 10-53 (BVP-500)
CN1 41/100 VD OUT 41 MB. 6-55 (BVP-550) /MB. 10-55 (BVP-500)
CN1 42/100 SYNC OUT 42 MB. 6-57 (BVP-550) /MB. 10-57 (BVP-500)
CN1 43/100 BF OUT 43 MB. 6-59 (BVP-550) /MB. 10-59 (BVP-500)
CN1 44/100 BLKG OUT 44 MB. 6-61 (BVP-550) /MB. 10-61 (BVP-500)
CN1 45/100 FLD 1 OUT 45 MB. 6-63 (BVP-550) /MB. 10-63 (BVP-500)
CN1 46/100 LALT OUT 46 MB. 6-65 (BVP-550) /MB. 10-65 (BVP-500)
CN1 47/100 2FH OUT 47 MB. 6-67 (BVP-550) /MB. 10-67 (BVP-500)
CN1 10/100 SAMPLE 1 OUT 10 MB. 14-19 (BVP-550) /MB. 6-4 (BVP-500)
CN1 18/100 SAMPLE 3 OUT 18 VA. 1-9
CN1 17/100 SAMPLE 2 OUT 17 IF. 1-4 (BVP-550) / IF. 870-4 (BVP-500) DA. 1-4 (BVP-550/500)
CN1 4/100 BLKG 4 MB. 14-20 (BVP-550) /MB. 6-6 (BVP-500)
CN1 49/100 HD OUT 49 AT. 1-43 / DA. 1-44 (BVP-550/500) IF. 1-40 (BVP-550) / IF. 870-40 (BVP-500)
CN1 50/100 VD OUT 50 AT. 1-44 / DA 1-43 (BVP-550/500) IF. 1-39 (BVP-550) / IF. 870-39 (BVP-500)
CN1 78/100 SC CONT OUT 78 MB. 6-114 (BVP-550) /MB. 10-114 (BVP-500)
CN1 35/100 INT/ E̅X̅T̅ OUT 35 MB. 6-105 (BVP-550) /MB. 10-105 (BVP-500)
R116 47
C75 0.1
CN1 76/100 SC (X) IN 76 MB. 6-112 (BVP-550) /MB. 10-112 (BVP-500)
CN1 75/100 SC (G) IN 75 MB. 6-111 (BVP-550) /MB. 10-111 (BVP-500)
IC35 (2/8) SN74HCT244APW-E0 5
Q20 DTC144EUA-T106
R124 100k
IC25 (5/8) TC74VHC244FS (EL)
Q23 DTC144EUA-T106
IC25 (4/8) TC74VHC244FS (EL)
D201 HSM88AS-TL
IC24 CXD8858R
R132 47k
R123 10k
R81 100
IC22 TC7SH04FU-TE85R
C60 0.1
EXT SYNC IN
CLK SEL 0
CLK SEL 1
MODE SEL 0
MODE SEL 1
18M OUT
27M OUT
36M OUT
H COM OUT 1
H COM OUT 2
COM OUT 1
COM OUT 2
36M IN
27M IN
ASET
SDA
SCL
ACK
CLR
HD
VD
SYNC
BF
BLKG
LALT
2FH
D1-PRE BLKG
SYNC2
SAMPLE
FLD
CF
NRWBLKG
INT/EXT
TOC OUT
EXT SC IN
INT SC IN
SC COM
24
RB10
RB1 (1/2)
RB2
RB3
RB4
R85 47
R133 0
IC42 (1/8) SN74HCT244APW-E0 5
IC42 (2/8) SN74HCT244APW-E0 5
IC30 (1/8) TC74VHC244FS (EL)
IC30 (2/8) TC74VHC244FS (EL)
IC30 (3/8) TC74VHC244FS (EL)
IC30 (4/8) TC74VHC244FS (EL)
IC30 (5/8) TC74VHC244FS (EL)
IC42 (5/8) SN74HCT244APW-E0 5
IC42 (6/8) SN74HCT244APW-E0 5
RB1 (2/2)
R86 47
IC35 (3/8) SN74HCT244APW-E0 5
IC25 (3/8) TC74VHC244FS (EL)
R134 47
IC25 (6/8) TC74VHC244FS (EL)
IC25 (7/8) TC74VHC244FS (EL)
IC25 (8/8) TC74VHC244FS (EL)
IC35 (7/8) SN74HCT244APW-E0 5
IC36 (2/2) TC74HC4538AFS-EL
IC38 TC7W74FU (TE12R)
IC39 TC7S86FU (TE85R)
IC40 TC7S66FU (TE85R)
IC32 (4/4) TL064CPM-E05
IC41 TC4W53FU (TE12R)
IC42 (3/8) SN74HCT244APW-E0 5
IC42 (4/8) SN74HCT244APW-E0 5
D11 1SS302-TE85L
R102 100k
R103 47k
R104 1k
R105 33k
R106 5.6k
R107 5.6k
R108 2.2k
R109 47k
R148 100k
R125
R110 47
R111 47
R112 47
R113 1M
R114 47
R115 1k
7V
-4.8V
FL1
IC34 (1/2) TC4W66FU (TE12R)
IC34 (2/2) TC4W66FU (TE12R)
IC35 (4/8) SN74HCT244APW-E0 5
IC35 (5/8) SN74HCT244APW-E0 5
IC35 (6/8) SN74HCT244APW-E0 5
IC36 (1/2) TC74HC4538AFS-EL
IC37 (1/2) TC7W08FU (TE12R)
IC37 (2/2) TC7W08FU (TE12R)
Q26 DTC144EUA-T106
IC42 (7/8) SN74HCT244APW-E0 5
IC42 (8/8) SN74HCT244APW-E0 5
IC43 TC7S00FU (TE85R)
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SG-234 (1/2)

BOARD NO. 1-657-449-21
LOT NO. 508-
B-¥BVP550SG234-12

SG-234 (2/2)

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BVP-550 (SY)

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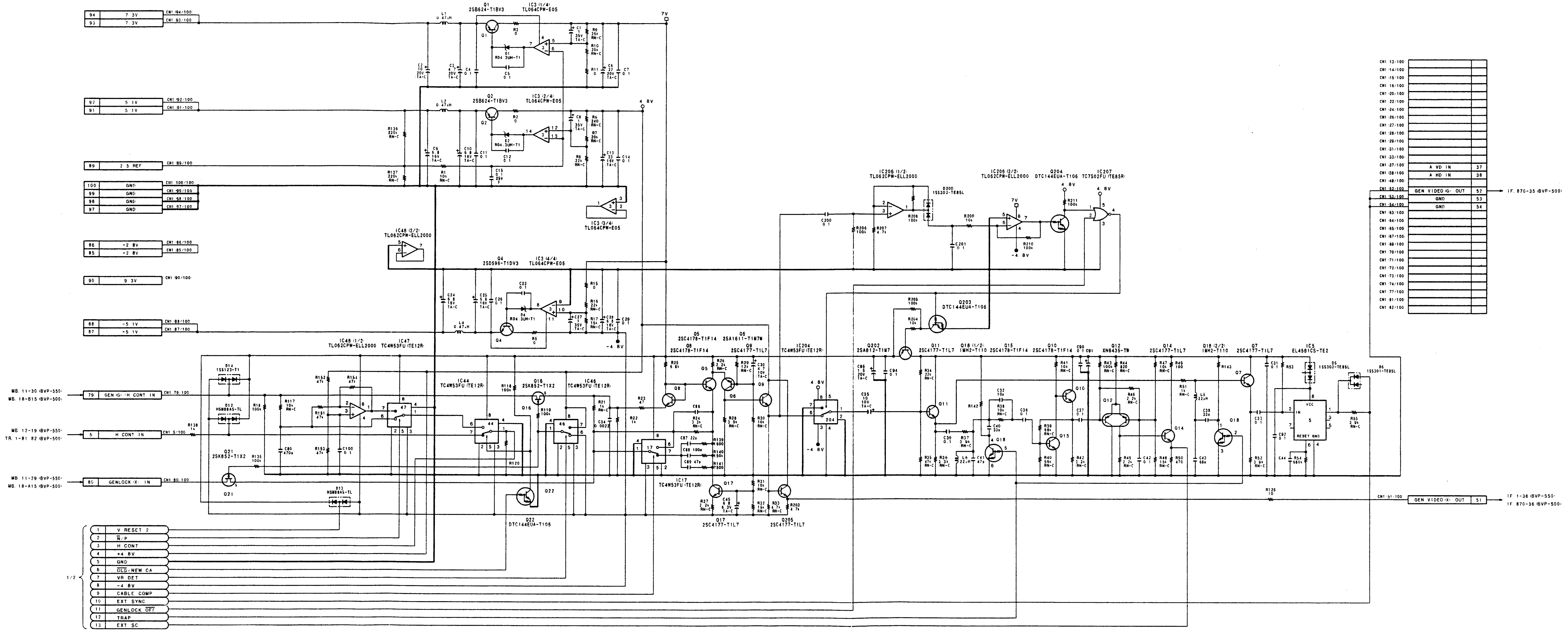

94 7.3V CN1 (94/100)
93 7.3V CN1 (93/100)
92 5.1V CN1 (92/100)
91 5.1V CN1 (91/100)
89 2.5 REF CN1 (89/100)
100 GND CN1 (100/100)
99 GND CN1 (99/100)
98 GND CN1 (98/100)
97 GND CN1 (97/100)
86 -2.8V CN1 (86/100)
85 -2.8V CN1 (85/100)
90 9.3V CN1 (90/100)
88 -5.1V CN1 (88/100)
87 -5.1V CN1 (87/100)
MB. 11-30 (BVP-550)
MB. 18-B15 (BVP-500)
79 GEN (G) /H CONT IN CN1 79/100
MB 12-19 (BVP-550)
TR. 1-81 82 (BVP-500)
5 H CONT IN CN1 (5/100)
R138 1k
MB 11-29 (BVP-550)
MB. 18-A15 (BVP-500)
80 GENLOCK (X) IN CN1 (80/100)
D14 1SS123-T1
D12 HSM88AS-TL
Q21 2SK852-T1X2
1/2
1 V RESET 2
2 N/P
3 H CONT
4 +4.8V
5 GND
6 OLD/NEW CA
7 VR DET
8 -4.8V
9 CABLE COMP
10 EXT SYNC
11 GENLOCK OFF
12 TRAP
13 EXT SC
Q1 2SB624-T1BV3
IC3 (1/4) TL064CPM-E05
Q2 2SB624-T1BV3
IC3 (2/4) TL064CPM-E05
IC3 (3/4) TL064CPM-E05
IC48 (2/2) TL062CPM-ELL2000
Q4 2SD596-T1DV3
IC3 (4/4) TL064CPM-E05
IC48 (1/2) TL062CPM-ELL2000
IC47 TC4W53FU (TE12R)
IC44 TC4W53FU (TE12R)
Q16 2SK852-T1X2
IC46 TC4W53FU (TE12R)
Q22 DTC144EUA-T106
IC17 TC4W53FU (TE12R)
Q5 2SC4178-T1F14
Q8 2SC4178-T1F14
Q6 2SA1611-T1M7N
Q9 2SC4177-T1L7
Q17 2SC4177-T1L7
Q205 2SC4177-T1L7
IC204 TC4W53FU (TE12R)
Q202 2SA812-T1M7
Q203 DTC144EUA-T106
IC206 (1/2) TL062CPM-ELL2000
D200 1SS302-TE85L
IC206 (2/2) TL062CPM-ELL2000
Q204 DTC144EUA-T106
IC207 TC7S02FU (TE85R)
Q11 2SC4177-T1L7
Q18 (1/2) IMH2-T110
Q15 2SC4178-T1F14
Q10 2SC4178-T1F14
Q12 XN6435-TW
Q14 2SC4177-T1L7
Q18 (2/2) IMH2-T110
Q7 2SC4177-T1L7
IC5 EL4581CS-TE2
D5 1SS302-TE85L
D6 1SS301-TE85L
R55 3.9k RN-C
7V
4.8V
-4.8V
CN1 (12/100)
CN1 (14/100)
CN1 (15/100)
CN1 (16/100)
CN1 (20/100)
CN1 (22/100)
CN1 (24/100)
CN1 (26/100)
CN1 (27/100)
CN1 (28/100)
CN1 (29/100)
CN1 (31/100)
CN1 (33/100)
CN1 (37/100) A VD IN 37
CN1 (38/100) A HD IN 38
CN1 (48/100)
CN1 (52/100) GEN VIDEO (G) OUT 52
IF. 870-35 (BVP-500)
CN1 (53/100) GND 53
CN1 (54/100) GND 54
CN1 (63/100)
CN1 (64/100)
CN1 (65/100)
CN1 (67/100)
CN1 (69/100)
CN1 (70/100)
CN1 (71/100)
CN1 (72/100)
CN1 (73/100)
CN1 (74/100)
CN1 (77/100)
CN1 (81/100)
CN1 (82/100)
CN1 (51/100) GEN VIDEO (X) OUT 51
IF 1-36 (BVP-550)
IF. 870-36 (BVP-500)

SG-234 (2/2)

BOARD NO. 1-657-449-21
LOT NO. 508-
B-¥BVP550-SG234-12

8-12

A | B | C | D | E | F | G | H

DA-88 (1/2)

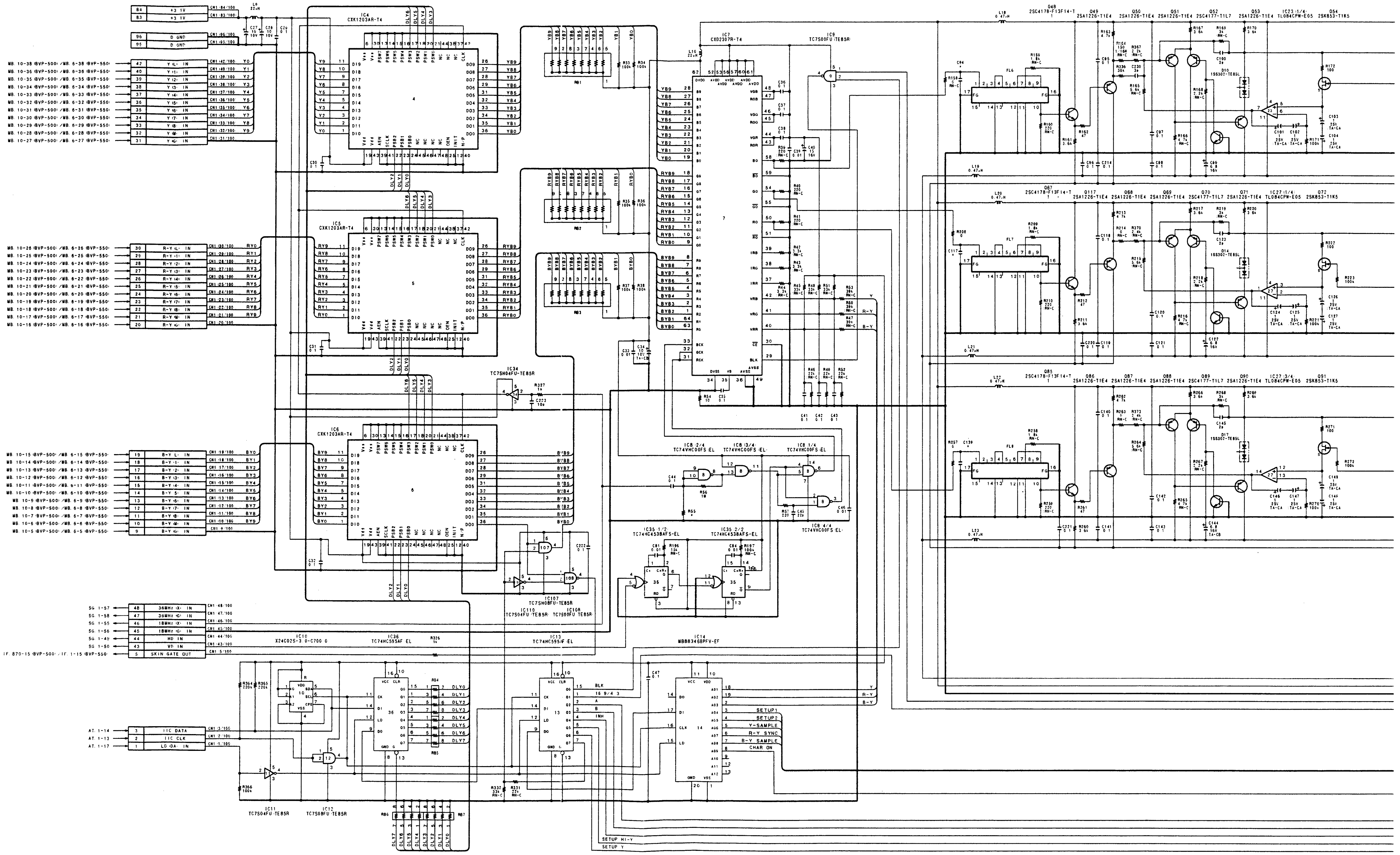
1

DA-88 BOARD

DA-88 (1-657-450-21)

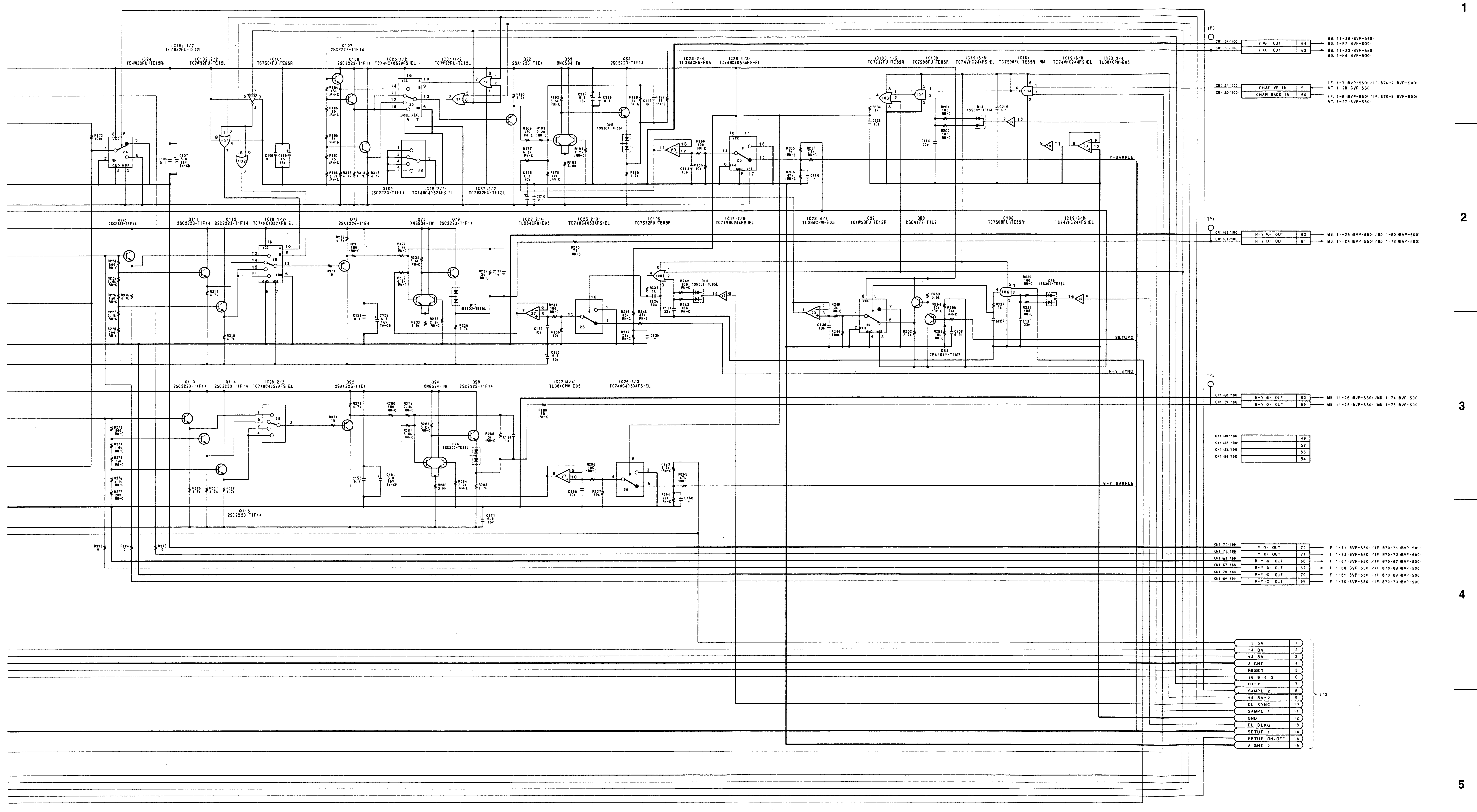
*: B SIDE

CN1	C-1
* D1	A-2
* D2	B-1
* D3	B-1
* D5	A-4
* D6	G-2
D7	F-2
* D9	C-1
* D10	D-3
* D11	G-2
D12	E-4
D13	G-2
* D14	E-3
D15	G-2
D16	G-2
* D17	G-3
D24	B-3
D25	C-4
D26	G-4
* D100	A-3
* D101	C-2
* D102	G-2
E1	F-4
FL1	A-4
FL2	A-3
FL3	B-3
FL4	B-2
FL5	C-2
FL6	D-3
FL7	E-3
FL8	F-3
* IC1	A-1
* IC2	B-1
* IC3	A-2
* IC4	D-1
* IC5	E-1
* IC6	E-1
* IC7	D-2
* IC8	D-1
IC9	E-2
* IC10	E-1
IC11	F-1
IC12	F-1
* IC13	E-2
IC14	F-2
* IC15	B-3
IC16	B-4
* IC17	B-4
* IC18	C-4
IC19	G-2
* IC20	C-2
IC23	C-3
* IC24	D-4
IC25	C-3
IC26	C-4
IC27	E-3
IC28	F-4
IC29	C-4
IC34	D-1
* IC35	E-1
* IC36	F-2
* IC37	C-3
IC100	F-2
IC101	C-3
IC102	C-3
IC103	G-2
* IC104	G-2
IC105	G-2
IC106	G-2
IC107	E-2
IC108	E-2
IC109	G-2
IC110	E-2
* JR1	B-4
* JR2	A-4
* JR3	C-2
* JR4	B-3
L1	A-1
L2	A-2
L3	A-1
L4	A-2
L5	B-1
L6	B-2
L7	A-3
L8	A-3
L9	B-1
L10	D-2
L11	F-1
L12	G-1
L13	G-3
L14	A-3
L15	B-3
L16	B-2
L17	B-2
L18	D-4
L19	D-4
* L20	E-4
* L21	E-4
* L22	F-4
L23	G-4
L24	G-1
L25	F-1
* Q1	A-2
Q2	A-2
Q3	B-2
* Q4	A-3
* Q7	A-3
* Q8	A-3
* Q9	A-3
* Q10	A-2
* Q11	B-3
* Q12	A-4
* Q13	B-4
Q14	B-4
Q15	A-4
* Q16	A-4
Q17	B-4
* Q18	B-4
* Q19	B-3
* Q20	A-2
* Q22	C-3
Q23	B-3
* Q25	C-4
* Q26	B-4
* Q27	B-2
* Q28	B-1
* Q29	C-2
* Q30	B-2
* Q32	C-2
* Q33	C-2
* Q34	C-2
Q43	C-2
Q44	C-1
* Q45	F-1
* Q46	G-1
* Q47	G-1
* Q48	D-4
* Q49	D-3
* Q50	D-4
* Q51	D-4
* Q52	D-4
* Q53	D-4
* Q54	D-4
Q59	C-4
Q63	C-4
* Q67	D-3
* Q68	E-3
* Q69	E-3
* Q70	E-3
* Q71	E-3
Q72	E-3
* Q73	E-4
Q75	E-4
Q79	E-4
* Q83	C-4
* Q84	C-4
* Q85	F-3
Q86	F-3
* Q87	G-3
* Q88	G-3
* Q89	G-3
* Q90	G-3
Q91	G-3
* Q92	F-4
Q94	G-4
Q98	G-4
* Q100	A-4
* Q101	A-4
* Q102	C-2
* Q103	C-2
* Q104	C-3
Q105	G-2
* Q106	G-1
* Q107	B-3
* Q108	C-3
* Q109	C-3
* Q110	E-4
* Q111	E-4
* Q112	E-4
* Q113	F-4
* Q114	G-4
* Q115	G-4
Q117	D-3
* RB1	D-2
* RB2	E-2
* RB3	E-2
RB4	F-2
RB5	F-1
* RB6	F-2
* RB7	F-2
TP1	B-2
TP2	C-1
TP3	D-4
TP4	E-4
TP5	F-4


IC4 CXK1203AR-T4
IC5 CXK1203AR-T4
IC6 CXK1203AR-T4
IC7 CXD2307R-T4
IC9 TC7S00FU-TE85R
IC34 TC7SH04FU-TE85R
IC8 2/4 TC74VHC00FS-EL
IC8 3/4 TC74VHC00FS-EL
IC8 1/4 TC74VHC00FS-EL
IC8 4/4 TC74VHC00FS-EL
IC35 1/2 TC74HC4538AFS-EL
IC35 2/2 TC74HC4538AFS-EL
IC107 TC7S08FU-TE85R
IC110 TC7SH04FU-TE85R
IC108 TC7S00FU-TE85R
IC10 X24C02S-3 0-C700 0
IC36 TC74HC595AF EL
IC13 TC74HC595AF EL
IC14 MB88346BPFV-EF
IC11 TC7S04FU-TE85R
IC12 TC7S08FU-TE85R
Q48 2SC4178-F13F14-T
Q49 2SA1226-T1E4
Q50 2SA1226-T1E4
Q51 2SA1226-T1E4
Q52 2SC4177-T1L7
Q53 2SA1226-T1E4
IC23 (1/4) TL084CPW-E05
Q54 2SK853-T1K5
D10 1SS302-TE85L
FL6
FL7
FL8
RB1
RB2
RB3
RB4
RB5
RB6
RB7
I2C DATA
I2C CLK
LD-DA IN
SKIN GATE OUT
SETUP1
SETUP2
Y-SAMPLE
R-Y SYNC
B-Y SAMPLE
CHAR ON
SETUP HI-Y
SETUP Y
+3.1V
D GND
1
2
3
4
5

8-14

A B C D E F G H

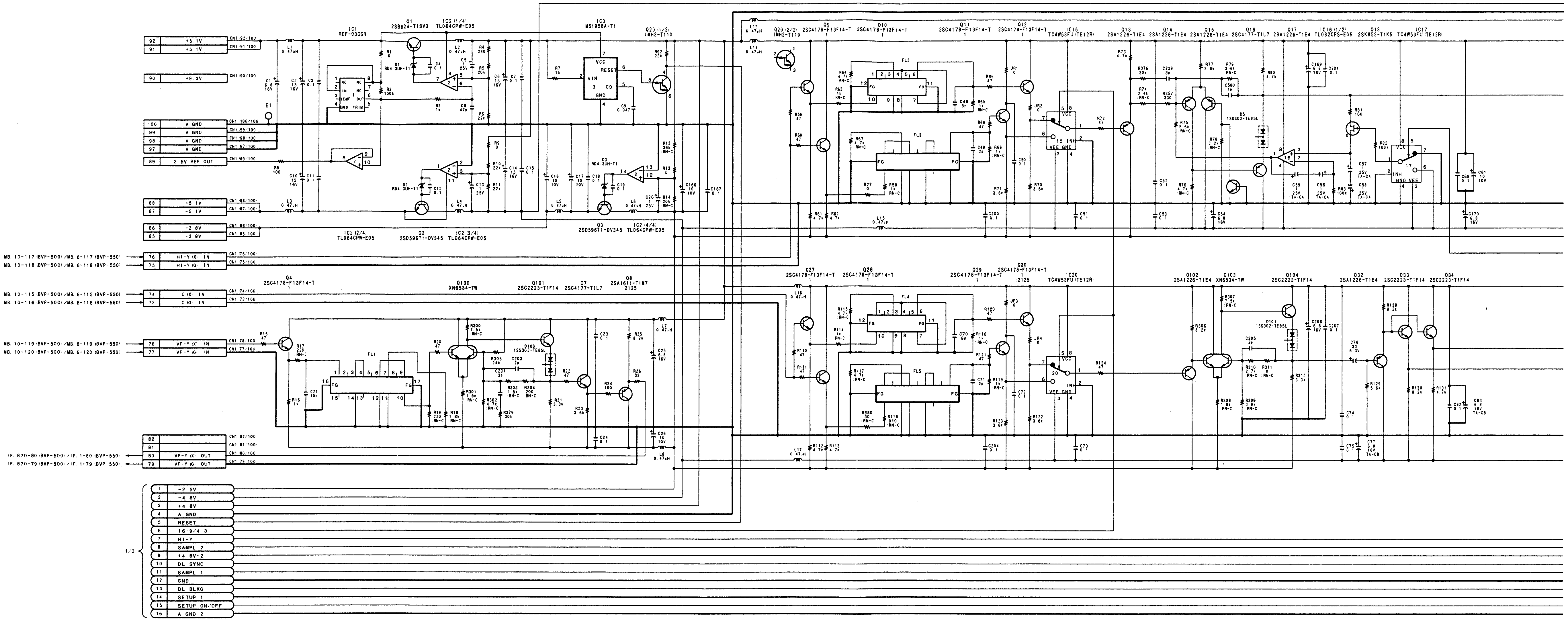

1
2
3
4
5
IC102 (1/2) TC7W32FU (TE12L)
IC24 TC4W53FU (TE12R)
IC102 (2/2) TC7W32FU (TE12L)
IC101 TC7S04FU (TE85R)
Q107 2SC2223-T1F14
Q108 2SC2223-T1F14
IC25 (1/2) TC74HC4052AFS (EL)
IC37 (1/2) TC7W32FU (TE12L)
Q22 2SA1226-T1E4
Q59 XN6534-TW
Q63 2SC2223-T1F14
IC23 (2/4) TL084CPW-E05
IC26 (1/3) TC74HC4053AFS-EL
IC103 (1/2) TC7S32FU (TE85R)
IC109 TC7S08FU (TE85R)
IC19 (5/8) TC74VHC244FS (EL)
IC104 TC7S00FU (TE85R) (NM)
IC19 (6/8) TC74VHC244FS (EL)
IC23 (3/4) TL084CPW-E05
Q109 2SC2223-T1F14
IC25 (2/2) TC74HC4052AFS (EL)
IC37 (2/2) TC7W32FU (TE12L)
D13 1SS302-TE85L
Y-SAMPLE
Q110 2SC2223-T1F14
Q111 2SC2223-T1F14
Q112 2SC2223-T1F14
IC28 (1/2) TC74HC4052AFS (EL)
Q73 2SA1226-T1E4
Q75 XN6534-TW
Q79 2SC2223-T1F14
IC27 (2/4) TL084CPW-E05
IC26 (2/3) TC74HC4053AFS-EL
IC105 TC7S32FU (TE85R)
IC19 (7/8) TC74VHC244FS (EL)
IC23 (4/4) TL084CPW-E05
IC29 TC4W53FU (TE12R)
Q83 2SC4177-T1L7
IC106 TC7S08FU (TE85R)
IC19 (8/8) TC74VHC244FS (EL)
Q84 2SA1611-T1M7
SETUP2
R-Y SYNC
Q113 2SC2223-T1F14
Q114 2SC2223-T1F14
IC28 (2/2) TC74HC4052AFS (EL)
Q92 2SA1226-T1E4
Q94 XN6534-TW
Q98 2SC2223-T1F14
IC27 (4/4) TL084CPW-E05
IC26 (3/3) TC74HC4053AFS-EL
Q115 2SC2223-T1F14
B-Y SAMPLE
TP3
CN1 (64/100)
Y (G) OUT 64
MB. 11-26 (BVP-550)
MD. 1-82 (BVP-500)
CN1 (63/100)
Y (X) OUT 63
MB. 11-23 (BVP-550)
MD. 1-84 (BVP-500)
CN1 (51/100)
CHAR VF IN 51
IF. 1-7 (BVP-550) /IF. 870-7 (BVP-500)
AT 1-28 (BVP-550)
CN1 (50/100)
CHAR BACK IN 50
IF. 1-8 (BVP-550) /IF. 870-8 (BVP-500)
AT. 1-27 (BVP-550)
TP4
CN1 (62/100)
R-Y (G) OUT 62
MB. 11-26 (BVP-550) /MD. 1-80 (BVP-500)
CN1 (61/100)
R-Y (X) OUT 61
MB. 11-24 (BVP-550) /MD. 1-78 (BVP-500)
TP5
CN1 (60/100)
B-Y (G) OUT 60
MB 11-26 (BVP-550) /MD. 1-74 (BVP-500)
CN1 (59/100)
B-Y (X) OUT 59
MB. 11-25 (BVP-550) /MD. 1-76 (BVP-500)
CN1 (49/100) 49
CN1 (52/100) 52
CN1 (53/100) 53
CN1 (54/100) 54
CN1 72/100
Y (G) OUT 72
IF. 1-71 (BVP-550) /IF. 870-71 (BVP-500)
CN1 71/100
Y (X) OUT 71
IF. 1-72 (BVP-550) /IF. 870-72 (BVP-500)
CN1 (68/100)
B-Y (G) OUT 68
IF. 1-67 (BVP-550) /IF. 870-67 (BVP-500)
CN1 67/100
B-Y (X) OUT 67
IF. 1-68 (BVP-550) /IF. 870-68 (BVP-500)
CN1 70/100
R-Y (G) OUT 70
IF 1-69 (BVP-550) /IF 870-69 (BVP-500)
CN1 69/100
R-Y (X) OUT 69
IF 1-70 (BVP-550) /IF. 870-70 (BVP-500)
-2 5V 1
-4 8V 2
+4 8V 3
A GND 4
RESET 5
16 9/4 3 6
HI-Y 7
SAMPL 2 8
+4 8V-2 9
DL SYNC 10
SAMPL 1 11
GND 12
DL BLKG 13
SETUP 1 14
SETUP ON/OFF 15
A GND 2 16
2/2
I
J
K
L
M
N
O
P

DA-88 (1/2)

BOARD NO. 1-657-450-21
LOT NO. 508-
B-¥BVP550-DA88-12

DA-88 (2/2)

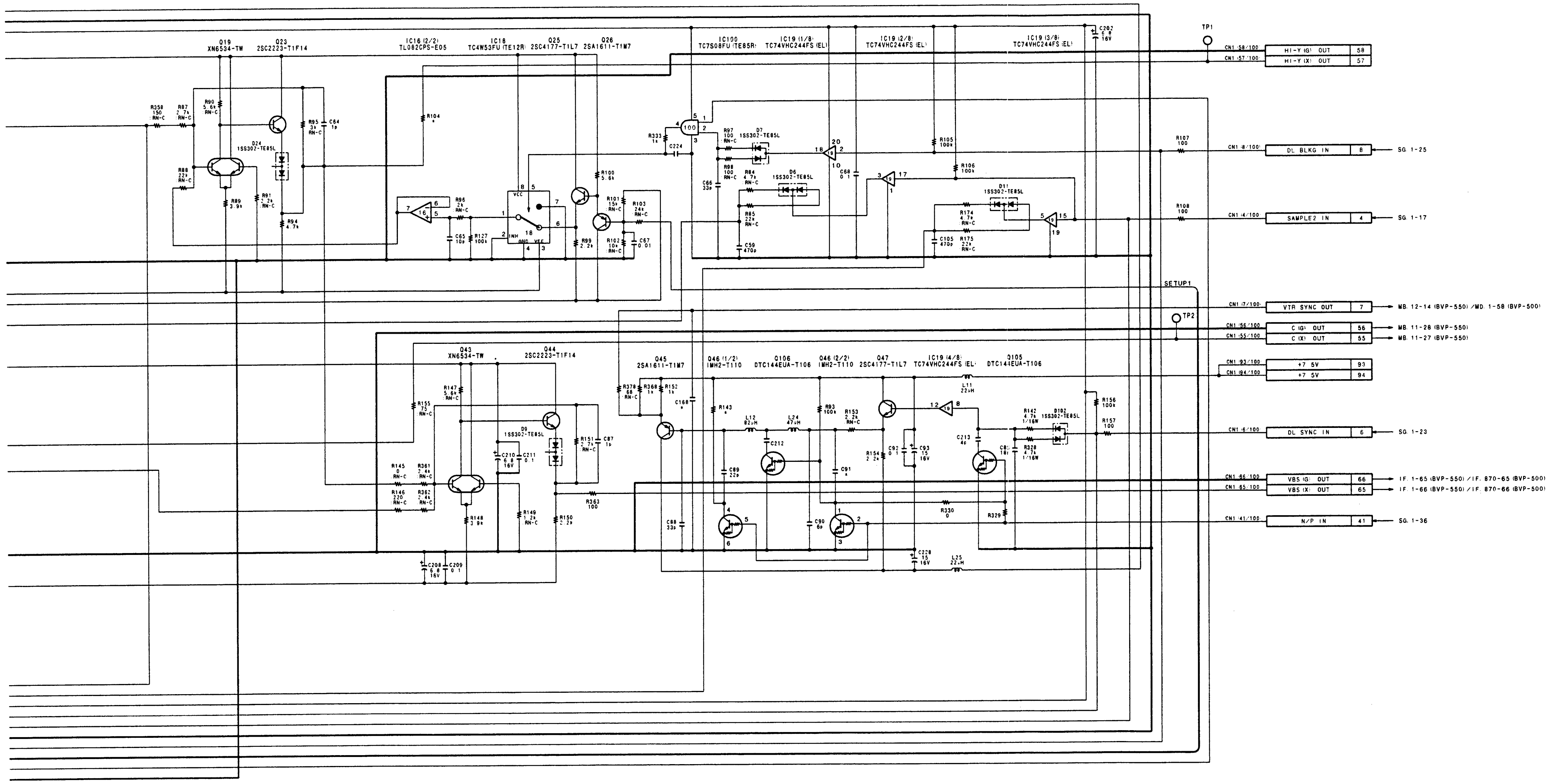
BVP-550 (SY)


1
2
3
4
5
92 +5.1V
91 +5.1V
90 +9.3V
100 A GND
99 A GND
98 A GND
97 A GND
89 2.5V REF OUT
88 -5.1V
87 -5.1V
86 -2.8V
85 -2.8V
MB. 10-117 (BVP-500) /MB. 6-117 (BVP-550) 76 HI-Y (X) IN
MB. 10-118 (BVP-500) /MB. 6-118 (BVP-550) 75 HI-Y (G) IN
MB. 10-115 (BVP-500) /MB. 6-115 (BVP-550) 74 C (X) IN
MB. 10-116 (BVP-500) /MB. 6-116 (BVP-550) 73 C (G) IN
MB. 10-119 (BVP-500) /MB. 6-119 (BVP-550) 78 VF-Y (X) IN
MB. 10-120 (BVP-500) /MB. 6-120 (BVP-550) 77 VF-Y (G) IN
82
81
IF. 870-80 (BVP-500) /IF. 1-80 (BVP-550) 80 VF-Y (X) OUT
IF. 870-79 (BVP-500) /IF. 1-79 (BVP-550) 79 VF-Y (G) OUT
1/2
1 -2.5V
2 -4.8V
3 +4.8V
4 A GND
5 RESET
6 16.9/4.3
7 HI-Y
8 SAMPL 2
9 +4.8V-2
10 DL SYNC
11 SAMPL 1
12 GND
13 DL BLKG
14 SETUP 1
15 SETUP ON/OFF
16 A GND 2
IC1 REF-03GSR
Q1 2SB624-T1BV3
IC2 (1/4) TL064CPW-E05
IC2 (2/4) TL064CPW-E05
IC2 (3/4) TL064CPW-E05
IC2 (4/4) TL064CPW-E05
Q2 2SD596T1-DV345
Q3 2SD596T1-DV345
IC3 M51958A-T1
Q20 (1/2) IMH2-T110
Q20 (2/2) IMH2-T110
Q4 2SC4178-F13F14-T
Q100 XN6534-TW
Q101 2SC2223-T1F14
Q7 2SC4177-T1L7
Q8 2SA1611-T1M7
Q9 2SC4178-F13F14-T
Q10 2SC4178-F13F14-T
Q11 2SC4178-F13F14-T
Q12 2SC4178-F13F14-T
IC15 TC4W53FU(TE12R)
Q13 2SA1226-T1E4
Q14 2SA1226-T1E4
Q15 2SA1226-T1E4
Q16 2SC4177-T1L7
Q17 2SA1226-T1E4
IC16 (1/2) TL082CPS-E05
Q18 2SK853-T1K5
IC17 TC4W53FU(TE12R)
Q27 2SC4178-F13F14-T
Q28 2SC4178-F13F14-T
Q29 2SC4178-F13F14-T
Q30 2SC4178-F13F14-T
IC20 TC4W53FU(TE12R)
Q102 2SA1226-T1E4
Q103 XN6534-TW
Q104 2SC2223-T1F14
Q32 2SA1226-T1E4
Q33 2SC2223-T1F14
Q34 2SC2223-T1F14
FL1
FL2
FL3
FL4
FL5
D100 1SS302-TE85L
D101 1SS302-TE85L
D5 1SS302-TE85L
E1

8-16

A	B	C	D	E	F	G	H

DA-88 (2/2)


Q19
XN6534-TW
Q23
2SC2223-T1F14
IC16 (2/2)
TL082CPS-E05
IC18
TC4W53FU (TE12R)
Q25
2SC4177-T1L7
Q26
2SA1611-T1M7
IC100
TC7S08FU (TE85R)
IC19 (1/8)
TC74VHC244FS (EL)
IC19 (2/8)
TC74VHC244FS (EL)
IC19 (3/8)
TC74VHC244FS (EL)
C202
6.8
16V
TP1
CN1 (58/100)
HI-Y (G) OUT
58
CN1 (57/100)
HI-Y (X) OUT
57
R107
100
CN1 (8/100)
DL BLKG IN
8
SG 1-25
R108
100
CN1 (4/100)
SAMPLE2 IN
4
SG 1-17
SETUP1
CN1 (7/100)
VTR SYNC OUT
7
MB 12-14 (BVP-550) /MD 1-58 (BVP-500)
TP2
CN1 (56/100)
C (G) OUT
56
MB 11-28 (BVP-550)
CN1 (55/100)
C (X) OUT
55
MB 11-27 (BVP-550)
CN1 (93/100)
+7.5V
93
CN1 (94/100)
+7.5V
94
Q43
XN6534-TW
Q44
2SC2223-T1F14
Q45
2SA1611-T1M7
Q46 (1/2)
IMH2-T110
Q106
DTC144EUA-T106
Q46 (2/2)
IMH2-T110
Q47
2SC4177-T1L7
IC19 (4/8)
TC74VHC244FS (EL)
Q105
DTC144EUA-T106
L11
22μH
L12
82μH
L24
47μH
D9
1SS302-TE85L
D102
1SS302-TE85L
CN1 (6/100)
DL SYNC IN
6
SG 1-23
CN1 (66/100)
VBS (G) OUT
66
IF 1-65 (BVP-550) / IF 870-65 (BVP-500)
CN1 (65/100)
VBS (X) OUT
65
IF 1-66 (BVP-550) / IF 870-66 (BVP-500)
CN1 (41/100)
N/P IN
41
SG 1-36
1
2
3
4
5
I
J
K
L
M
N
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P

DA-88 (2/2)
BOARD NO. 1-657-450-21
LOT NO. 508-
B-¥BVP550-DA88-12

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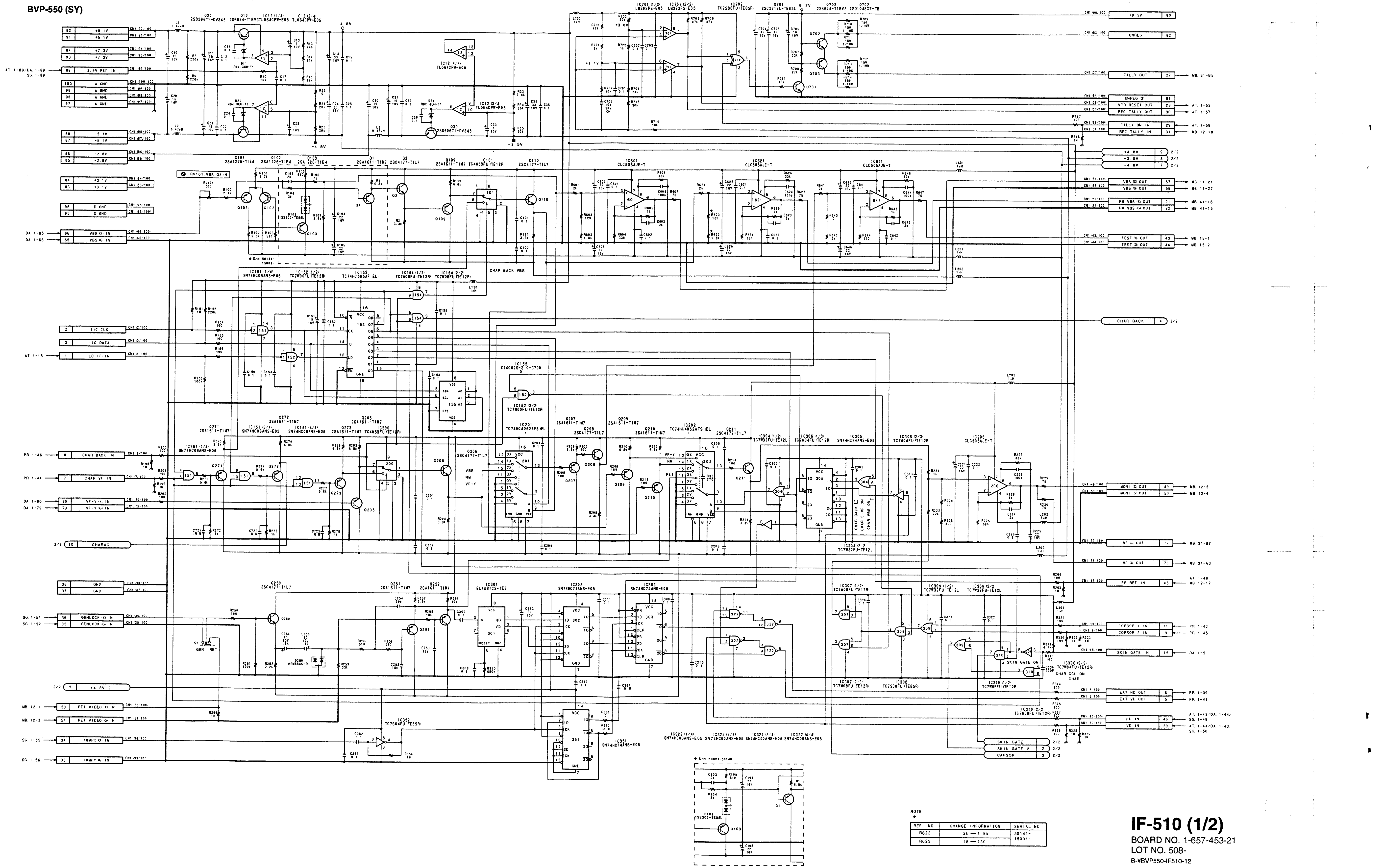
IF-510 (1/2)

IF-510 BOARD

IF-510 (1-657-453-21)

*: B SIDE

CN1	C-1
* D11	A-2
* D21	A-2
* D31	B-2
* D101	D-3
* D250	B-3
* D400	C-2
* D401	C-3
* D402	D-3
* D500	E-2
* IC12	A-2
* IC101	D-4
IC151	F-4
* IC152	F-3
* IC153	F-3
* IC154	F-3
IC155	G-4
IC200	B-4
* IC201	B-4
* IC202	A-4
* IC206	A-3
* IC301	G-2
* IC302	F-2
IC303	F-2
* IC304	G-2
IC305	F-3
* IC306	F-1
* IC307	G-2
* IC308	G-1
IC309	G-1
* IC310	G-1
IC322	F-1
* IC351	F-2
* IC352	F-2
IC400	C-3
* IC404	C-4
IC410	C-3
IC420	D-3
* IC500	E-1
* IC501	C-1
* IC502	D-1
* IC601	E-3
* IC621	E-2
* IC641	E-2
IC701	A-3
IC702	A-2
L1	A-1
L2	A-1
L3	B-1
L150	E-4
L201	A-3
L202	A-3
L203	A-4
L250	B-3
L301	F-2
L400	D-2
L401	D-3
L402	C-3
L500	D-2
L501	C-1
L502	D-1
L601	D-4
L602	E-3
L603	D-3
L700	A-2
* Q1	E-4
* Q2	E-4
* Q10	A-2
* Q20	A-2
* Q30	B-2
Q101	D-4
Q102	D-4
Q103	D-4
* Q109	E-4
* Q110	D-3
* Q205	B-4
Q206	B-4
Q207	B-4
Q208	B-4
Q209	A-4
Q210	A-4
Q211	A-4
* Q250	B-4
* Q251	B-3
* Q271	C-4
* Q272	C-4
* Q273	C-3
* Q352	G-3
* Q353	F-3
* Q354	G-3
* Q401	B-2
* Q402	B-3
* Q403	C-2
* Q404	C-3
* Q405	C-3
* Q406	B-3
* Q410	C-2
* Q411	C-3
* Q412	C-3
* Q413	C-3
* Q414	C-3
* Q420	D-2
* Q421	D-3
* Q422	D-3
* Q423	D-3
* Q424	D-3
Q430	C-3
Q431	C-4
* Q500	C-2
* Q501	B-2
* Q502	B-2
* Q503	C-2
* Q504	C-2
* Q505	C-2
* Q506	D-2
* Q507	D-2
* Q508	D-2
Q509	E-2
Q510	E-1
* Q701	A-3
* Q702	A-3
* Q703	A-3
RV101	D-4
S1	C-3


BVP-550 (SY)
+5.1V
+7.3V
2.5V REF IN
A GND
-5.1V
-2.8V
+3.1V
D GND
VBS (X) IN
VBS (G) IN
IIC CLK
IIC DATA
LD (IF) IN
CHAR BACK IN
CHAR VF IN
VF-Y (X) IN
VF-Y (G) IN
CHARAC
GND
GENLOCK (X) IN
GENLOCK (G) IN
+4.8V-2
RET VIDEO (X) IN
RET VIDEO (G) IN
18MHz (X) IN
18MHz (G) IN
+9.3V
UNREG
TALLY OUT
UNREG (G)
VTR RESET OUT
REC TALLY OUT
TALLY ON IN
REC TALLY IN
+4.8V
-2.5V
-4.8V
VBS (X) OUT
VBS (G) OUT
RM VBS (X) OUT
RM VBS (G) OUT
TEST (X) OUT
TEST (G) OUT
CHAR BACK
MONI (X) OUT
MONI (G) OUT
VF (G) OUT
VF (X) OUT
PB REF IN
CORSOR 1 IN
CORSOR 2 IN
SKIN GATE IN
EXT HD OUT
EXT VD OUT
HD IN
VD IN
SKIN GATE
SKIN GATE 2
CARSOR
RV101 VBS GAIN
CHAR BACK VBS
IC155 X24C02S-3.0-C700
IC601 CLC505AJE-T
IC621 CLC505AJE-T
IC641 CLC505AJE-T
IC206 CLC505AJE-T
IC301 EL4581CS-TE2
IC302 SN74HC74ANS-E05
IC303 SN74HC74ANS-E05
IC351 SN74HC74ANS-E05
IC352 TC7S04FU-TE85R
IC201 TC74HC4052AFS(EL)
IC202 TC74HC4052AFS(EL)
IC153 TC74HC595AF(EL)
IC12 TL064CPM-E05
IC701 LM393PS-E05
IC702 TC7S86FU(TE85R)
* S/N 50001-50140
A B C D E F G H
1 2 3 4 5

NOTE
★

REF NO	CHANGE INFORMATION	SERIAL NO
R622	2k → 1.8k	50141- 15001-
R623	15 → 130	

IF-510 (1/2)

BOARD NO. 1-657-453-21
LOT NO. 508-
B-¥BVP550-IF510-12

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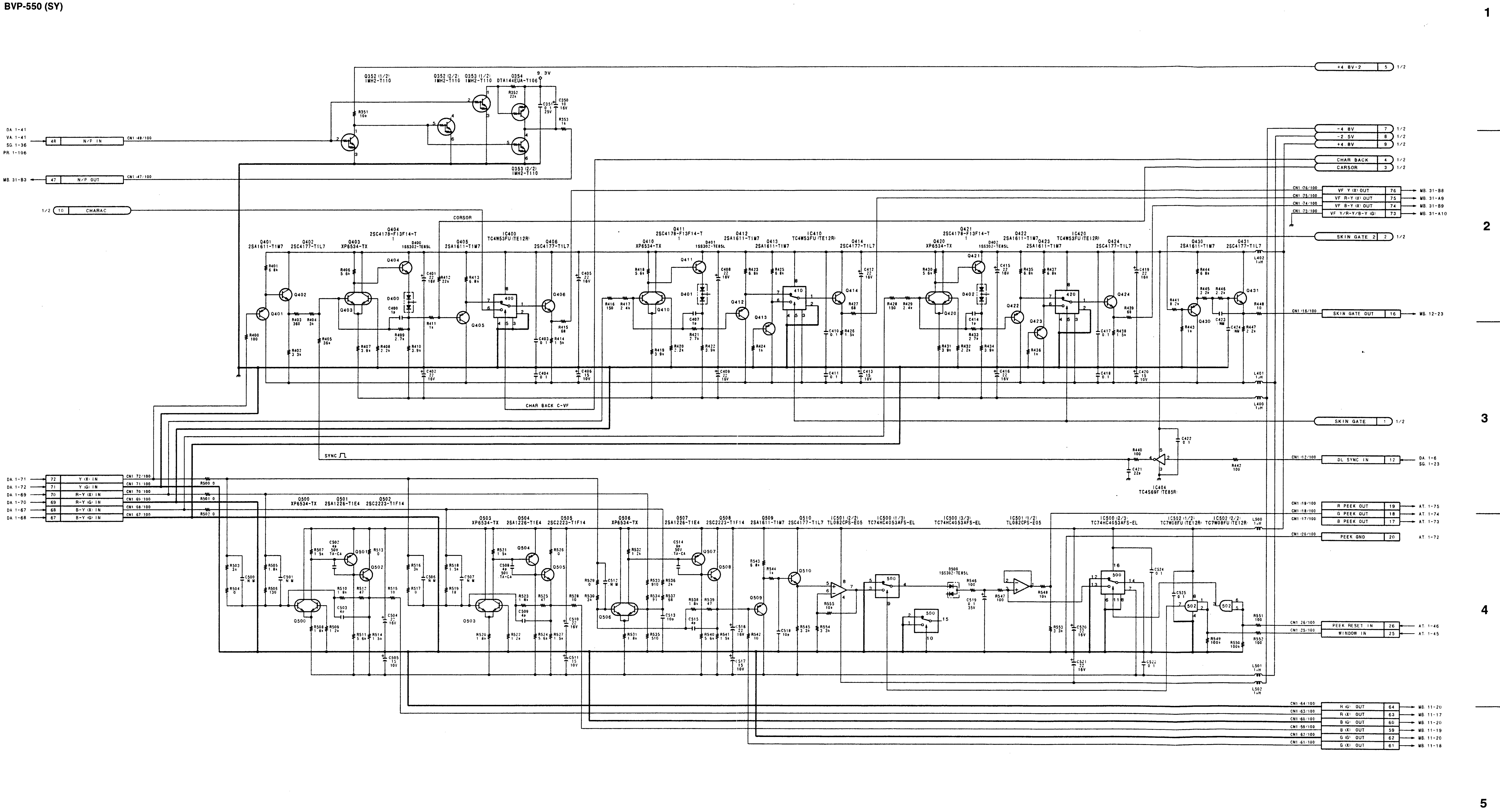
IF-510 (2/2)

IF-510 (2/2)

BVP-550 (SY)



DA. 1-41
VA. 1-41
SG. 1-36
PR. 1-106
48 N/P IN
CN1 (48/100
MB. 31-B3
47 N/P OUT
CN1 (47/100
1/2 10 CHARAC
Q352 (1/2) IMH2-T110
Q352 (2/2) IMH2-T110
Q353 (1/2) IMH2-T110
Q354 DTA144EUA-T106
Q353 (2/2) IMH2-T110
9.3V
R351 10k
R352 22k
C351 0.1 25V
C350 10 16V
R353 1k
+4.8V-2 5 1/2
-4.8V 7 1/2
-2.5V 8 1/2
+4.8V 9 1/2
CHAR BACK 4 1/2
CARSOR 3 1/2
CN1 (76/100 VF Y (X) OUT 76 MB. 31-B8
CN1 (75/100 VF R-Y (X) OUT 75 MB. 31-A9
CN1 (74/100 VF B-Y (X) OUT 74 MB. 31-B9
CN1 (73/100 VF Y/R-Y/B-Y (G) 73 MB. 31-A10
SKIN GATE 2 2 1/2
CN1 (16/100 SKIN GATE OUT 16 MB. 12-23
CORSOR
Q401 2SA1611-T1M7
Q402 2SC4177-T1L7
Q403 XP6534-TX
Q404 2SC4178-F13F14-T
D400 1SS302-TE85L
Q405 2SA1611-T1M7
IC400 TC4W53FU (TE12R)
Q406 2SC4177-T1L7
Q410 XP6534-TX
Q411 2SC4178-F13F14-T
D401 1SS302-TE85L
Q412 2SA1611-T1M7
Q413 2SA1611-T1M7
IC410 TC4W53FU (TE12R)
Q414 2SC4177-T1L7
Q420 XP6534-TX
Q421 2SC4178-F13F14-T
D402 1SS302-TE85L
Q422 2SA1611-T1M7
Q423
IC420 TC4W53FU (TE12R)
Q424 2SC4177-T1L7
Q430 2SA1611-T1M7
Q431 2SC4177-T1L7
L400 1μH
L401 1μH
L402 1μH
CHAR BACK C-VF
SKIN GATE 1 1/2
SYNC
IC404 TC4S69F (TE85R)
CN1 (12/100 DL SYNC IN 12 DA. 1-6 SG. 1-23
DA. 1-71 72 Y (X) IN CN1 72/100
DA. 1-72 71 Y (G) IN CN1 71/100
DA. 1-69 70 R-Y (X) IN CN1 70/100
DA. 1-70 69 R-Y (G) IN CN1 69/100
DA. 1-67 68 B-Y (X) IN CN1 68/100
DA. 1-68 67 B-Y (G) IN CN1 67/100
R500 0
R501 0
R502 0
Q500 XP6534-TX
Q501 2SA1226-T1E4
Q502 2SC2223-T1F14
Q503 XP6534-TX
Q504 2SA1226-T1E4
Q505 2SC2223-T1F14
Q506 XP6534-TX
Q507 2SA1226-T1E4
Q508 2SC2223-T1F14
Q509 2SA1611-T1M7
Q510 2SC4177-T1L7
IC501 (2/2) TL082CPS-E05
IC500 (1/3) TC74HC4053AFS-EL
IC500 (3/3) TC74HC4053AFS-EL
IC501 (1/2) TL082CPS-E05
IC500 (2/3) TC74HC4053AFS-EL
IC502 (1/2) TC7W08FU (TE12R)
IC502 (2/2) TC7W08FU (TE12R)
D500 1SS302-TE85L
L500 1μH
L501 1μH
L502 1μH
CN1 (19/100 R PEEK OUT 19 AT. 1-75
CN1 (18/100 G PEEK OUT 18 AT. 1-74
CN1 (17/100 B PEEK OUT 17 AT. 1-73
CN1 (20/100 PEEK GND 20 AT. 1-72
R551 100
R552 100
CN1 26/100 PEEK RESET IN 26 AT. 1-46
CN1 (25/100 WINDOW IN 25 AT. 1-45
CN1 (64/100 R (G) OUT 64 MB. 11-20
CN1 (63/100 R (X) OUT 63 MB. 11-17
CN1 (60/100 B (G) OUT 60 MB. 11-20
CN1 (59/100 B (X) OUT 59 MB. 11-19
CN1 (62/100 G (G) OUT 62 MB. 11-20
CN1 (61/100 G (X) OUT 61 MB. 11-18
1
2
3
4
5

IF-510 (2/2)

BOARD NO. 1-657-453-21
LOT NO. 508-
B-¥BVP550-IF510-12

A | B | C | D | E | F | G | H

MB-602 BOARD

BVP-550 (SY)

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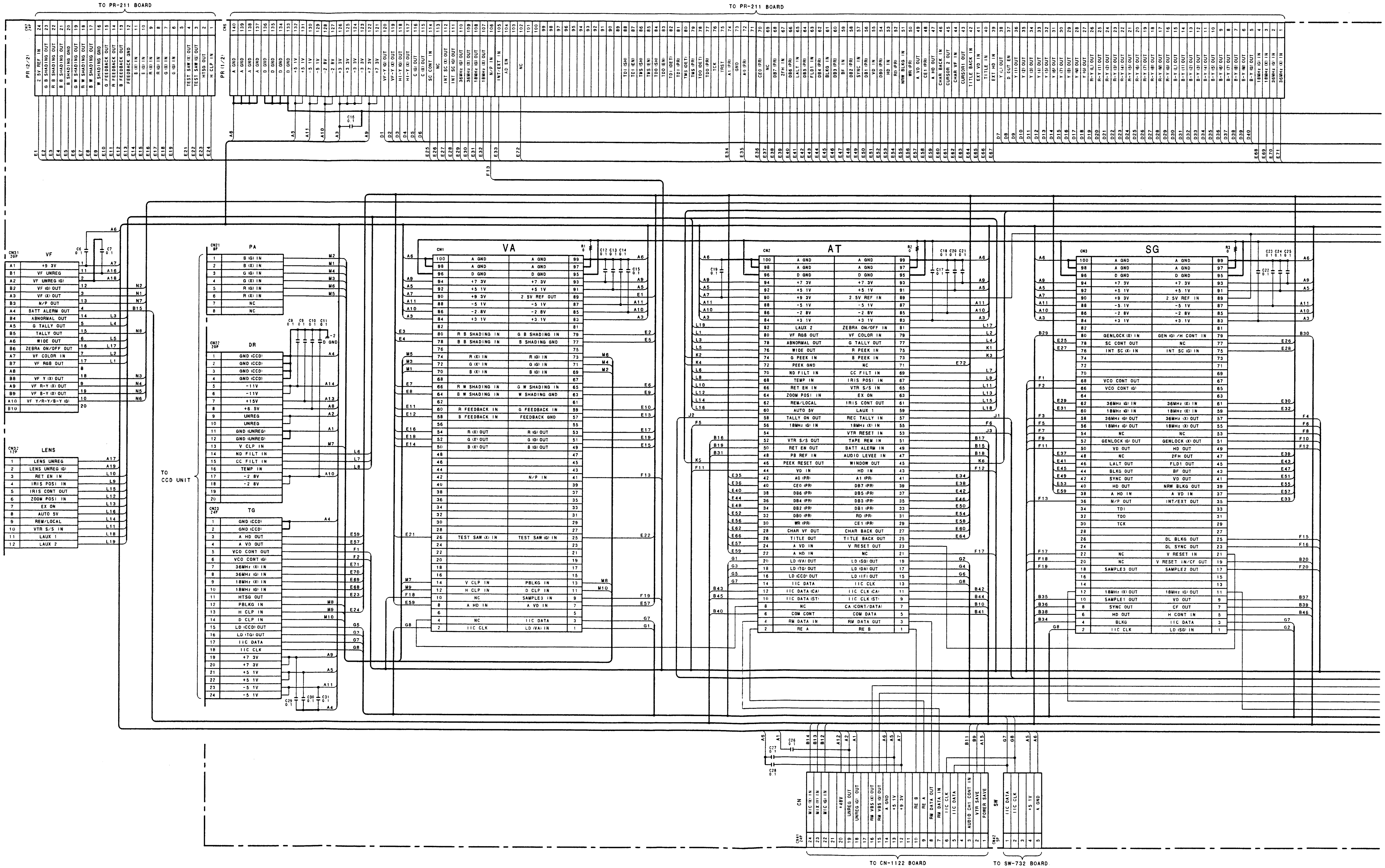
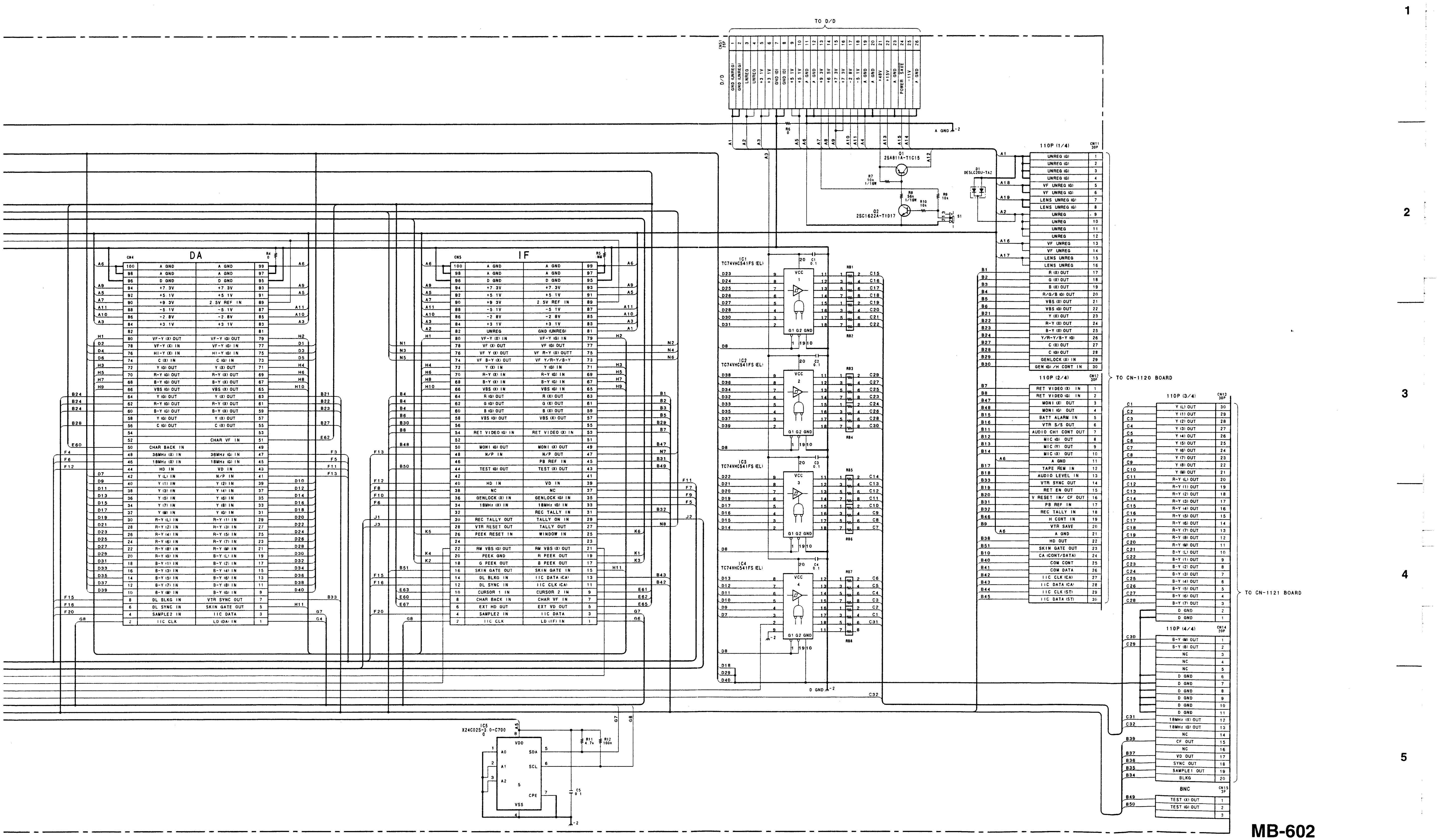

TO PR-211 BOARD
TO PR-211 BOARD
VF
LENS
PA
DR
TG
TO CCD UNIT
VA
AT
SG
CN
SW
TO CN-1122 BOARD
TO SW-732 BOARD

A | B | C | D | E | F | G | H



TO D/D
D/D
CN51 26P
A GND -2
Q1 2SA811A-T1C15
Q2 2SC1622A-T1D17
R6 0
R7 10k 1/16W
R8 56k 1/16W
R9 10k
R10 10k
S1
D1 DE5LC20U-TA2
110P (1/4) CN11 30P
110P (2/4) CN12 30P
TO CN-1120 BOARD
110P (3/4) CN13 30P
110P (4/4) CN14 20P
TO CN-1121 BOARD
BNC CN15 3P
DA CN4
IF CN5
IC1 TC74VHC541FS (EL)
IC2 TC74VHC541FS (EL)
IC3 TC74VHC541FS (EL)
IC4 TC74VHC541FS (EL)
IC5 X24C02S-3.0-C700
RB1 RB2 RB3 RB4 RB5 RB6 RB7 RB8
D GND -2
1
2
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4
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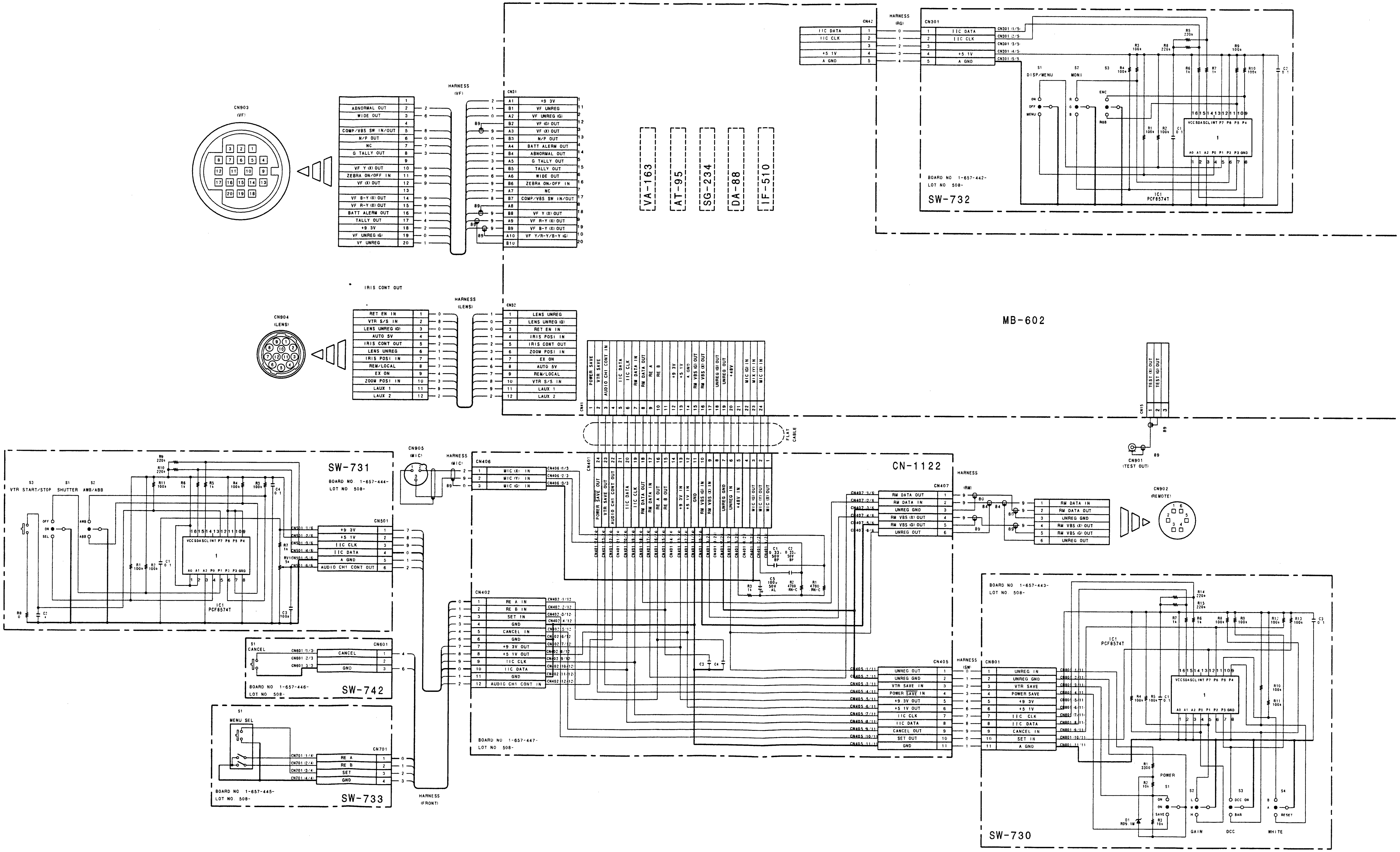
MB-602

BOARD NO. 1-657-437-21
LOT NO. 508-
B-¥BVP550-MB602-11

1

FRAME WIRING

BVP-550 (SY) : S/N 16371 and Higher


CN903 (VF)
HARNESS (VF)
CN31
CN904 (LENS)
HARNESS (LENS)
CN32
IRIS CONT OUT
VA-163
AT-95
SG-234
DA-88
IF-510
CN42
HARNESS (RG)
CN301
BOARD NO 1-657-442-
LOT NO 508-
SW-732
MB-602
CN41
FLAT CABLE
CN15
CN901 (TEST OUT)
SW-731
BOARD NO 1-657-444-
LOT NO 508-
CN501
CN905 (MIC)
HARNESS (MIC)
CN406
CN-1122
CN407
HARNESS (RM)
CN902 (REMOTE)
CN401
CN402
SW-742
BOARD NO 1-657-446-
LOT NO 508-
CN601
SW-733
BOARD NO 1-657-445-
LOT NO 508-
CN701
HARNESS (FRONT)
BOARD NO 1-657-447-
LOT NO 508-
CN405
HARNESS (SW)
CN801
BOARD NO 1-657-443-
LOT NO 508-
SW-730
IC1 PCF8574T
POWER
GAIN
DCC
WHITE

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3

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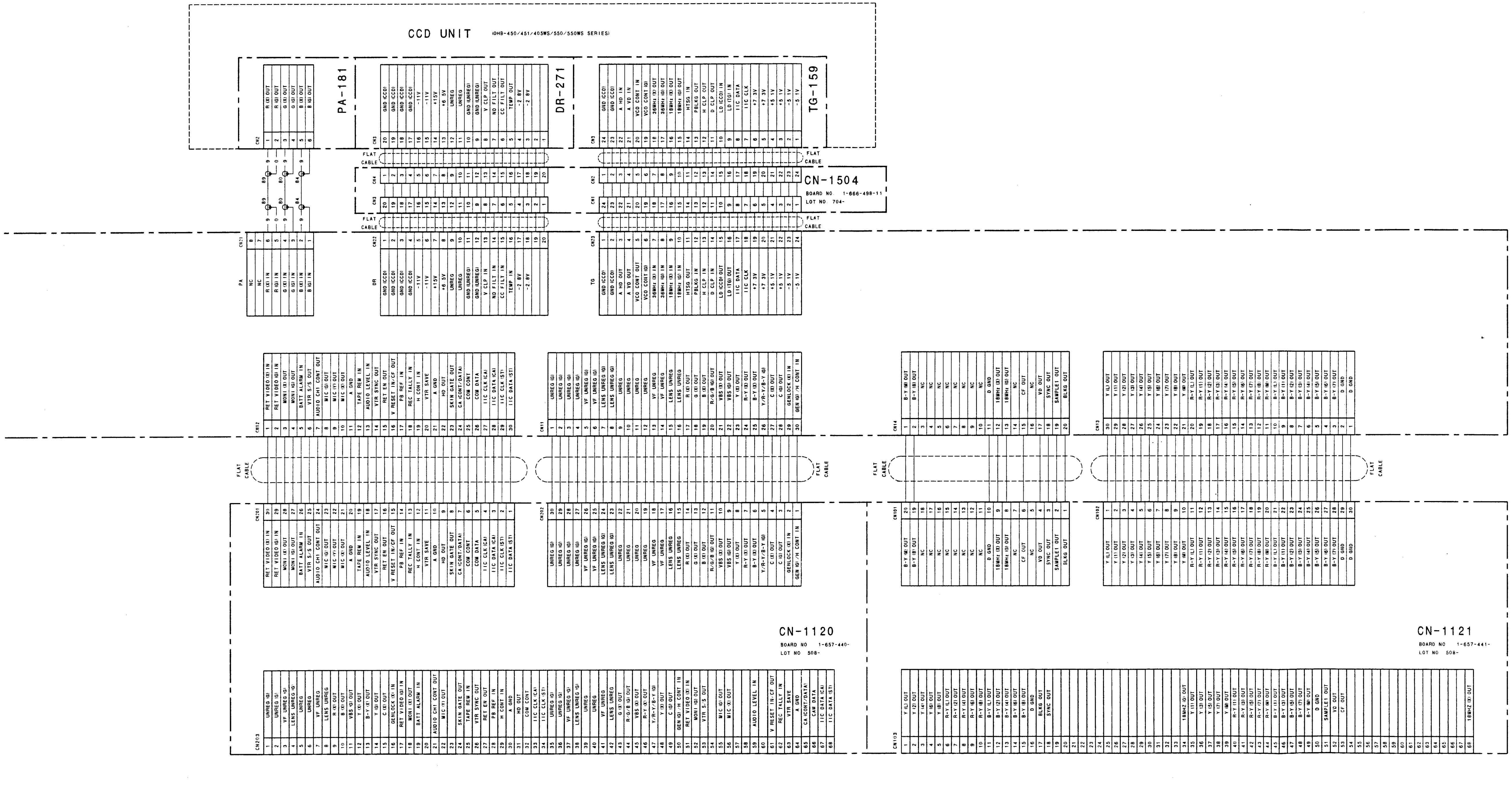
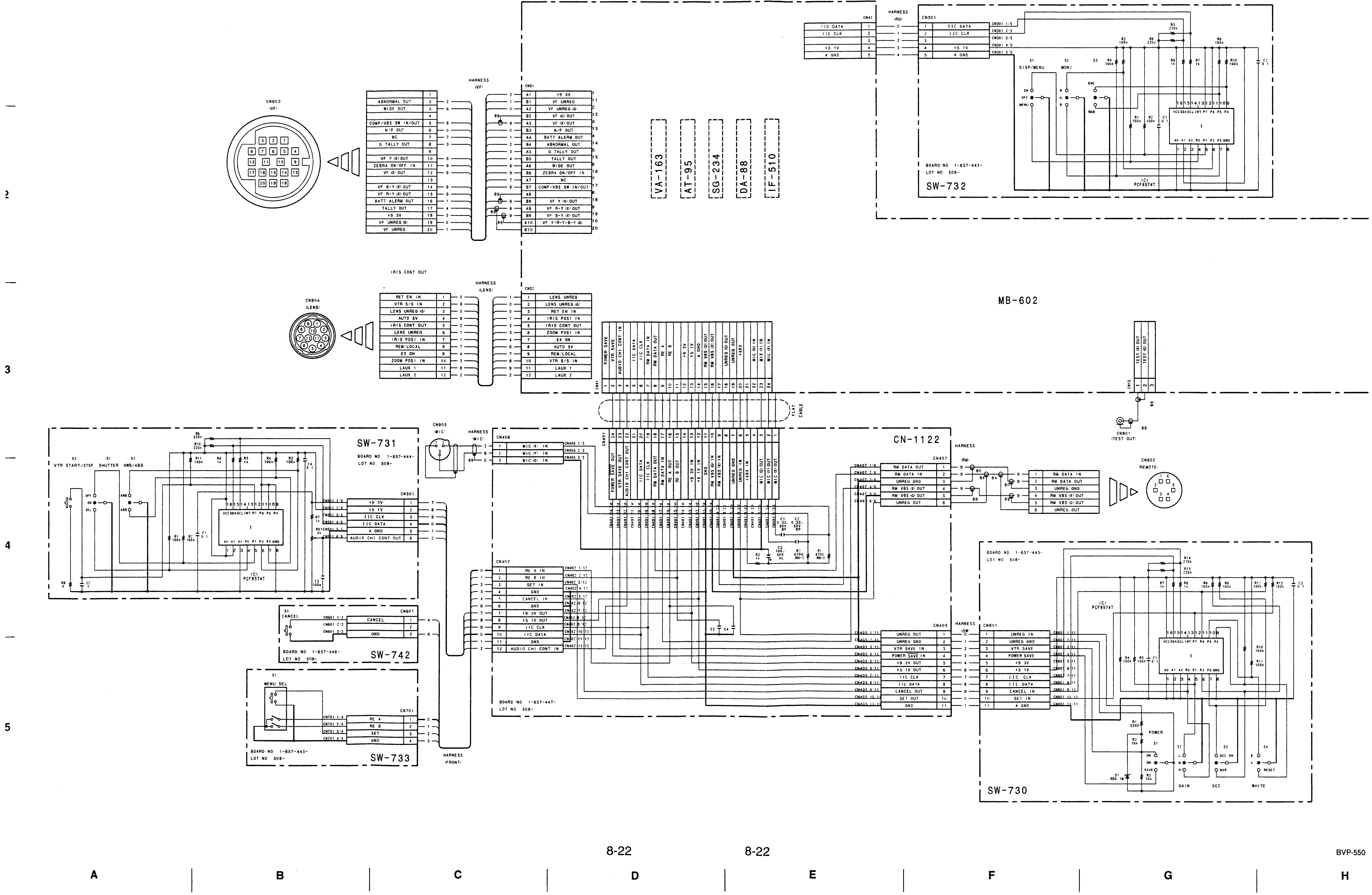

CCD UNIT (DXB-450/451/405WS/550/550WS SERIES)
PA-181
DR-271
TG-159
FLAT CABLE
CN-1504
BOARD NO. 1-666-498-11
LOT NO. 704-
CN-1120
BOARD NO. 1-657-440-
LOT NO. 508-
CN-1121
BOARD NO. 1-657-441-
LOT NO. 508-
TO ANALOG CA
TO DIGITAL CA

FRAME WIRING
CN-1120/1121/1122/1142/1504
SW-730/731/732/733/742

A-¥BVP550-FRAME/M
B-¥BVP550-FRAME/M
B-¥BVP550-CN1122/M
B-¥BVP550-SW730/M
B-¥BVP550-SW731/M
B-¥BVP550-SW732/M
B-¥BVP550-SW733/M
B-¥BVP550-SW742/M

FRAME WIRING

BVP-550 (SY) : S/N 15001 through 16370, 50001 through 50440


1
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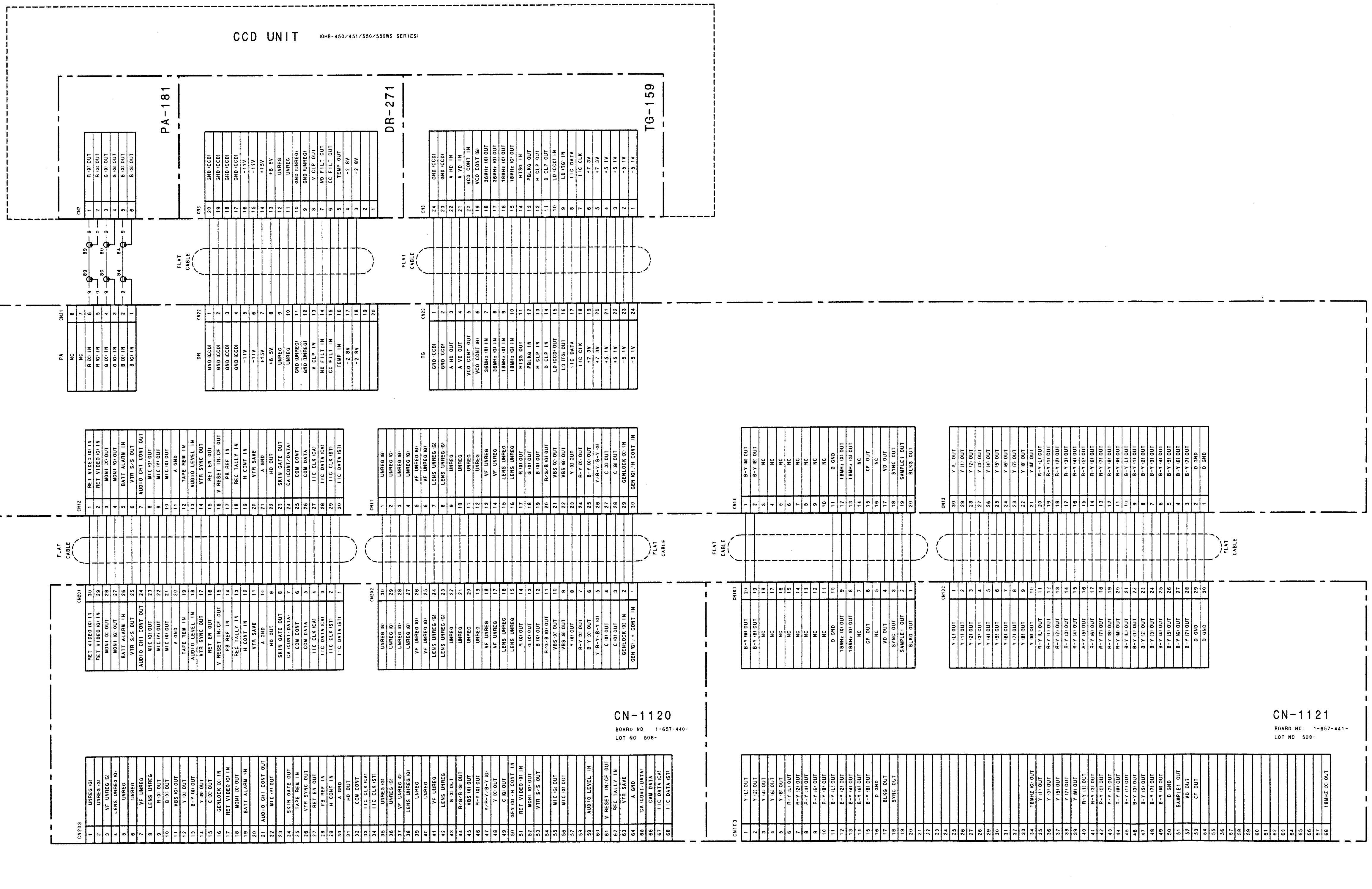
F
G
H
CN903 (VF)
HARNESS (VF)
CN31
CN904 (LENS)
HARNESS (LENS)
CN32
IRIS CONT OUT
VA-163
AT-95
SG-234
DA-88
IF-510
MB-602
SW-732
BOARD NO 1-657-442-
LOT NO 508-
HARNESS (RG)
CN301
IC1 PCF8574T
S1 DISP/MENU
S2 MONI
S3
SW-731
BOARD NO 1-657-444-
LOT NO 508-
S3 VTR START/STOP
S1 SHUTTER
S2 AWB/ABB
CN501
CN905 (MIC)
HARNESS (MIC)
CN406
CN-1122
CN401
CN402
CN405
CN407
FLAT CABLE
HARNESS (RM)
CN902 (REMOTE)
CN15
CN901 (TEST OUT)
TEST (X) OUT
TEST (G) OUT
SW-742
BOARD NO 1-657-446-
LOT NO 508-
S1 CANCEL
CN601
SW-733
BOARD NO 1-657-445-
LOT NO 508-
S1 MENU SEL
CN701
HARNESS (FRONT)
BOARD NO 1-657-447-
LOT NO 508-
SW-730
BOARD NO 1-657-443-
LOT NO 508-
HARNESS (SW)
CN801
S1 POWER
S2 GAIN
S3 DCC
S4 WHITE

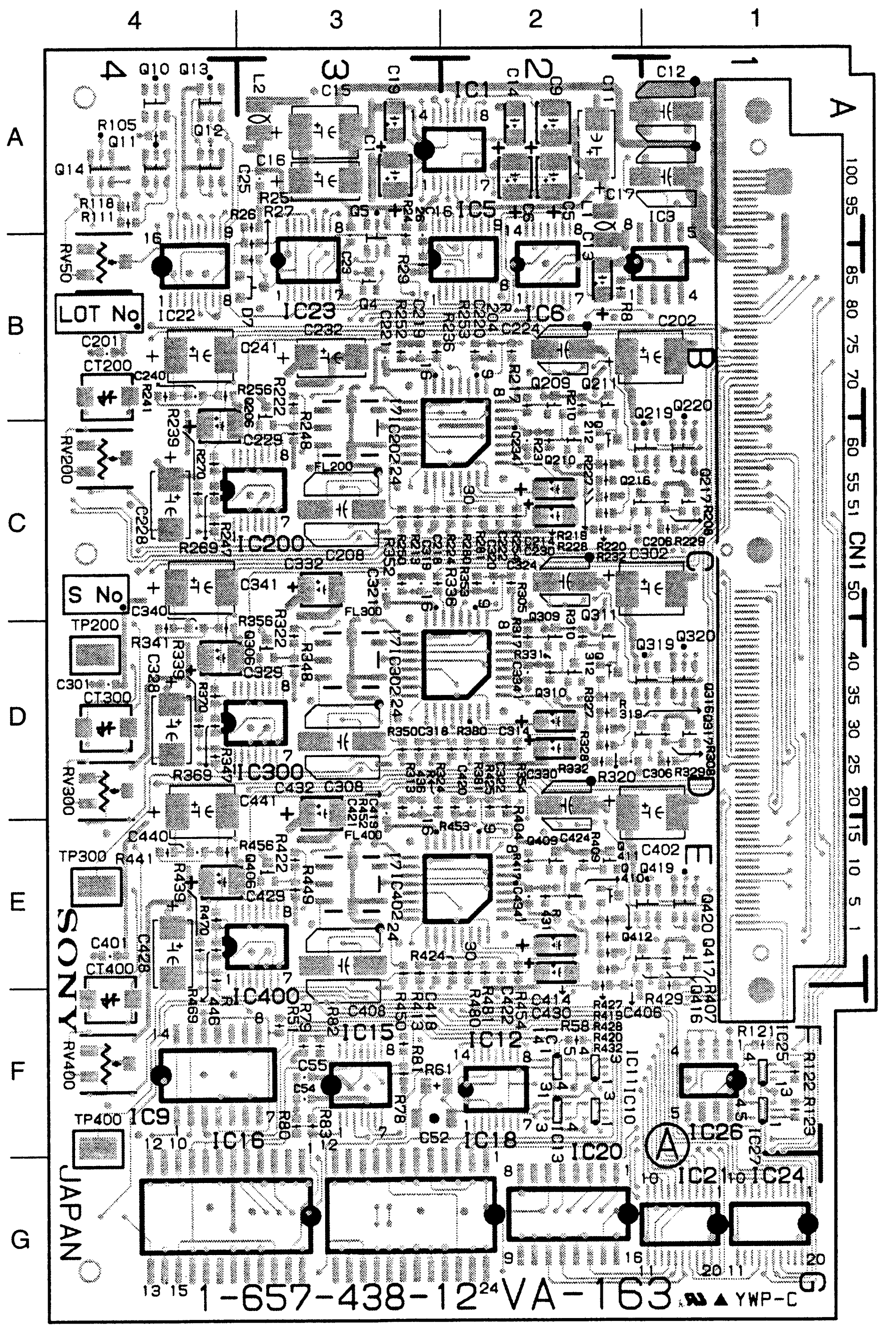

CCD UNIT
(DHB-450/451/550/550WS SERIES)
PA-181
DR-271
TG-159
FLAT CABLE
CN-1120
BOARD NO 1-657-440-
LOT NO 508-
CN-1121
BOARD NO 1-657-441-
LOT NO 508-
TO ANALOG CA
TO DIGITAL CA

FRAME WIRING
CN-1120/1121/1122/1142
SW-730/731/732/733/742

A-¥BVP550-FRAME/M
B-¥BVP550-FRAME/M
B-¥BVP550-CN1122/M
B-¥BVP550-SW730/M
B-¥BVP550-SW731/M
B-¥BVP550-SW732/M
B-¥BVP550-SW733/M
B-¥BVP550-SW742/M

Section 9
Board Layouts

VA-163 BOARD


4
3
2
1
A
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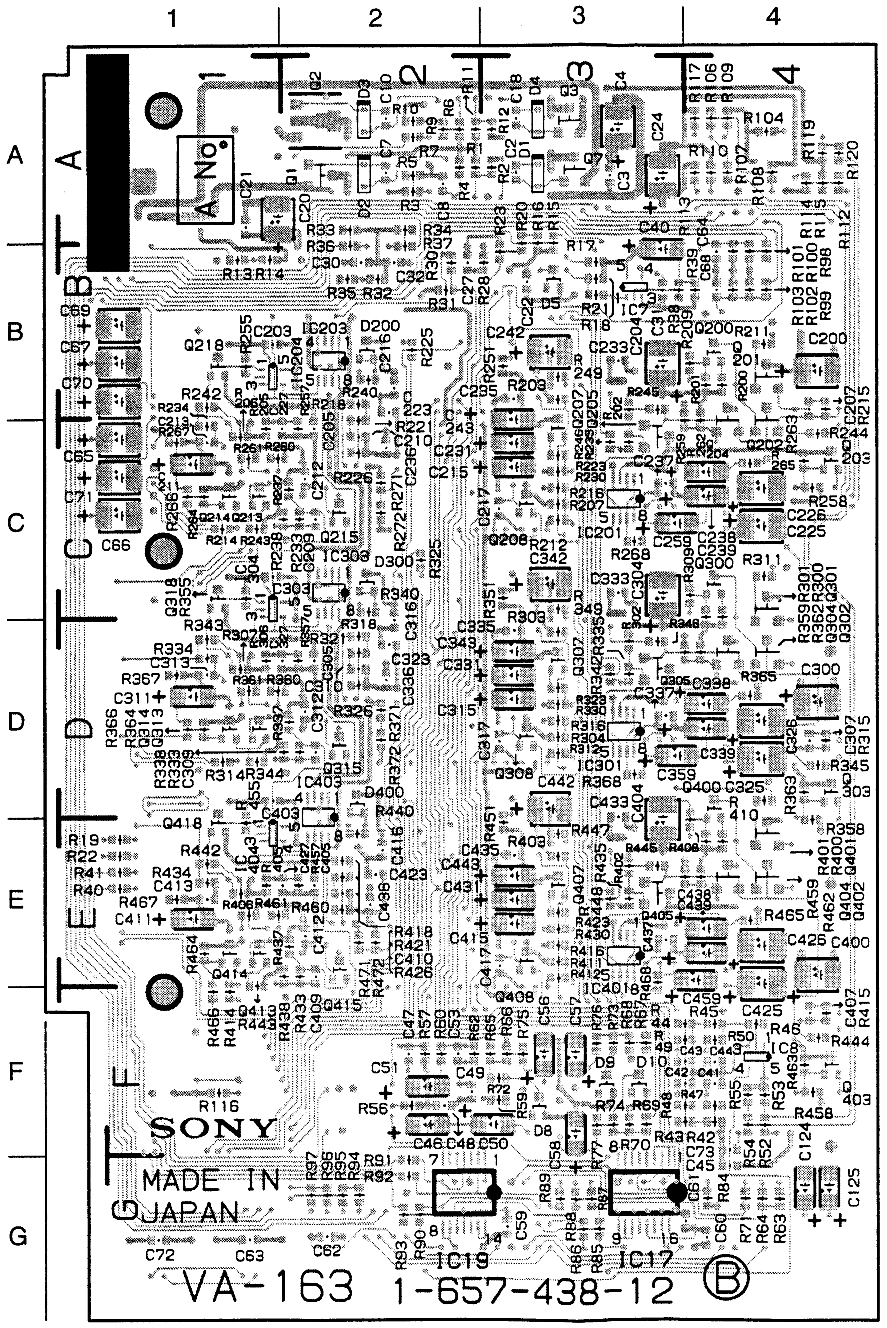
C
D
E
F
G
LOT No.
S No.
CN1
SONY
JAPAN
1-657-438-12 VA-163
YWP-C

VA-163 - A SIDE -

1-657-438-12, 21


1
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A
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C
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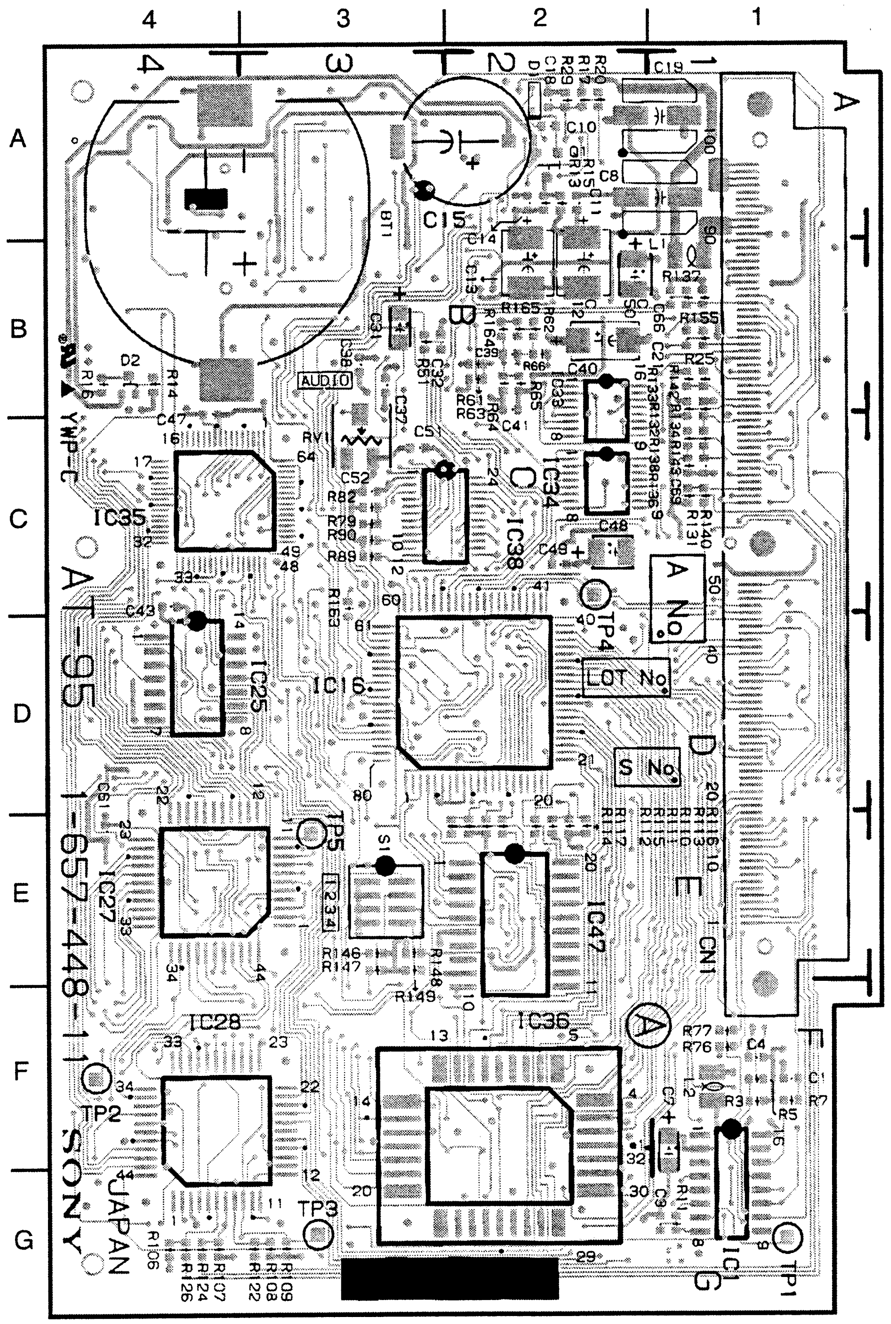
E
F
G
A No.
SONY
MADE IN JAPAN
VA-163 1-657-438-12
B

VA-163 - B SIDE -

1-657-438-12, 21

AT-95 BOARD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A
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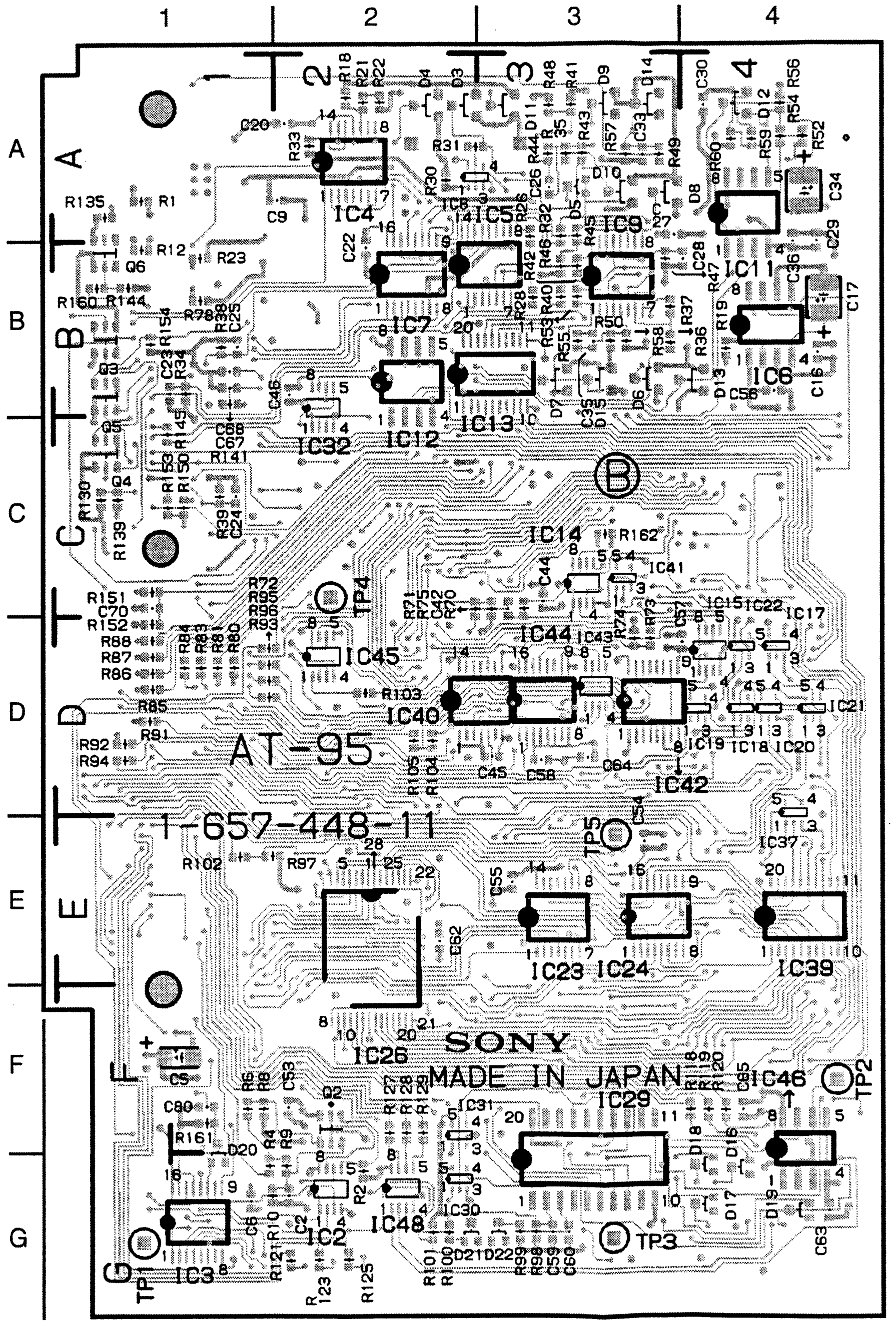
G
IC35
IC25
IC16
IC27
IC28
IC38
IC34
IC47
IC36
IC1
C15
AUDIO
A No.
LOT No.
S No.
CN1
TP1
TP2
TP3
TP4
TP5
AT-95
1-657-448-11
SONY
JAPAN

AT-95 - A SIDE -

1-657-448-11, 12, 21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G
IC4
IC5
IC7
IC9
IC11
IC6
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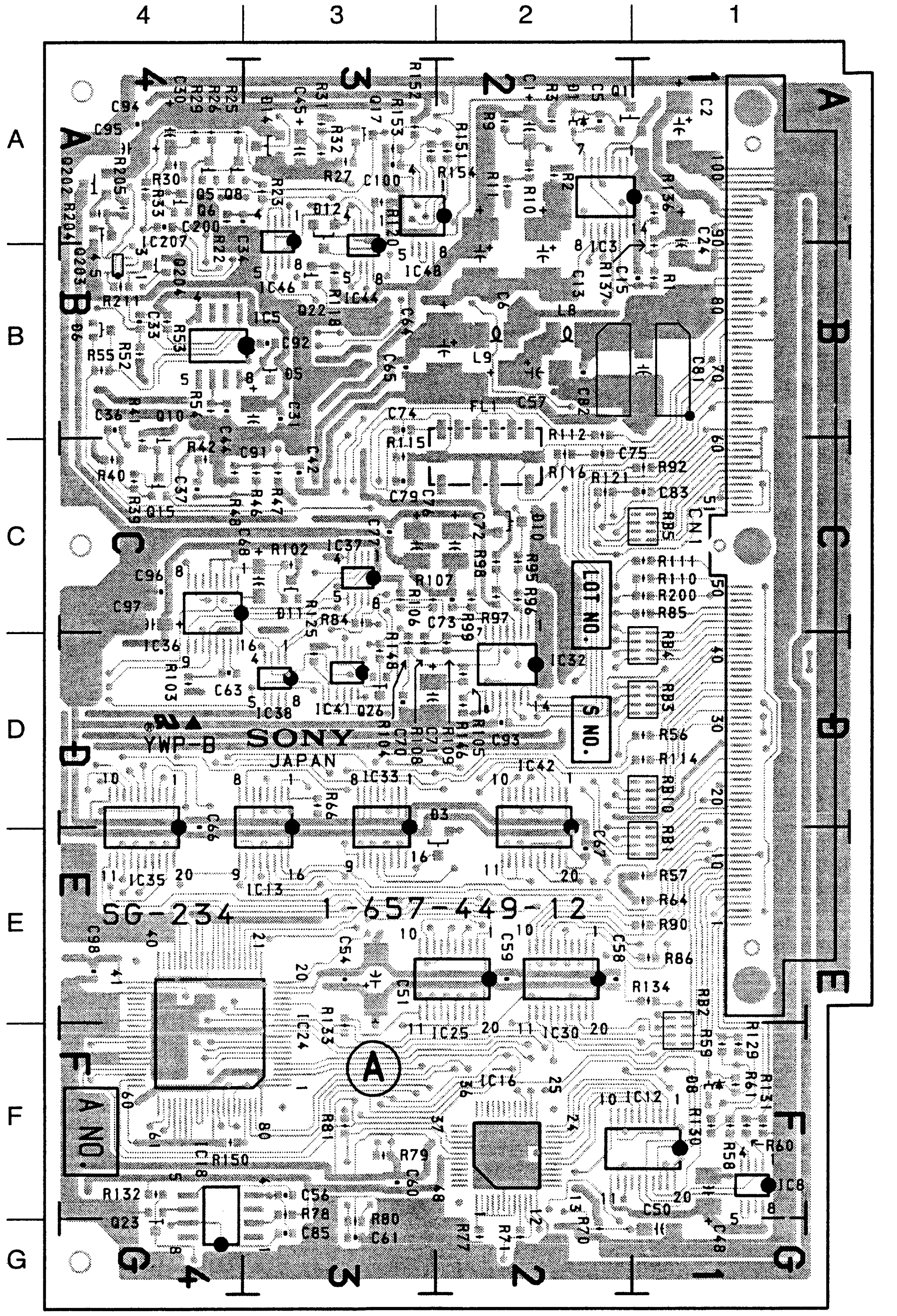
IC13
IC32
IC14
IC45
IC44
IC40
IC42
IC37
IC23
IC24
IC39
IC26
IC29
IC46
IC2
IC48
IC3
TP1
TP2
TP3
TP4
TP5
AT-95
1-657-448-11
SONY
MADE IN JAPAN

AT-95 - B SIDE -

1-657-448-11, 12, 21

SG-234 BOARD


4
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A
B
C
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G
CN1
LOT NO.
S NO.
A NO.
YWP-B
SONY
JAPAN
SG-234 1-657-449-12
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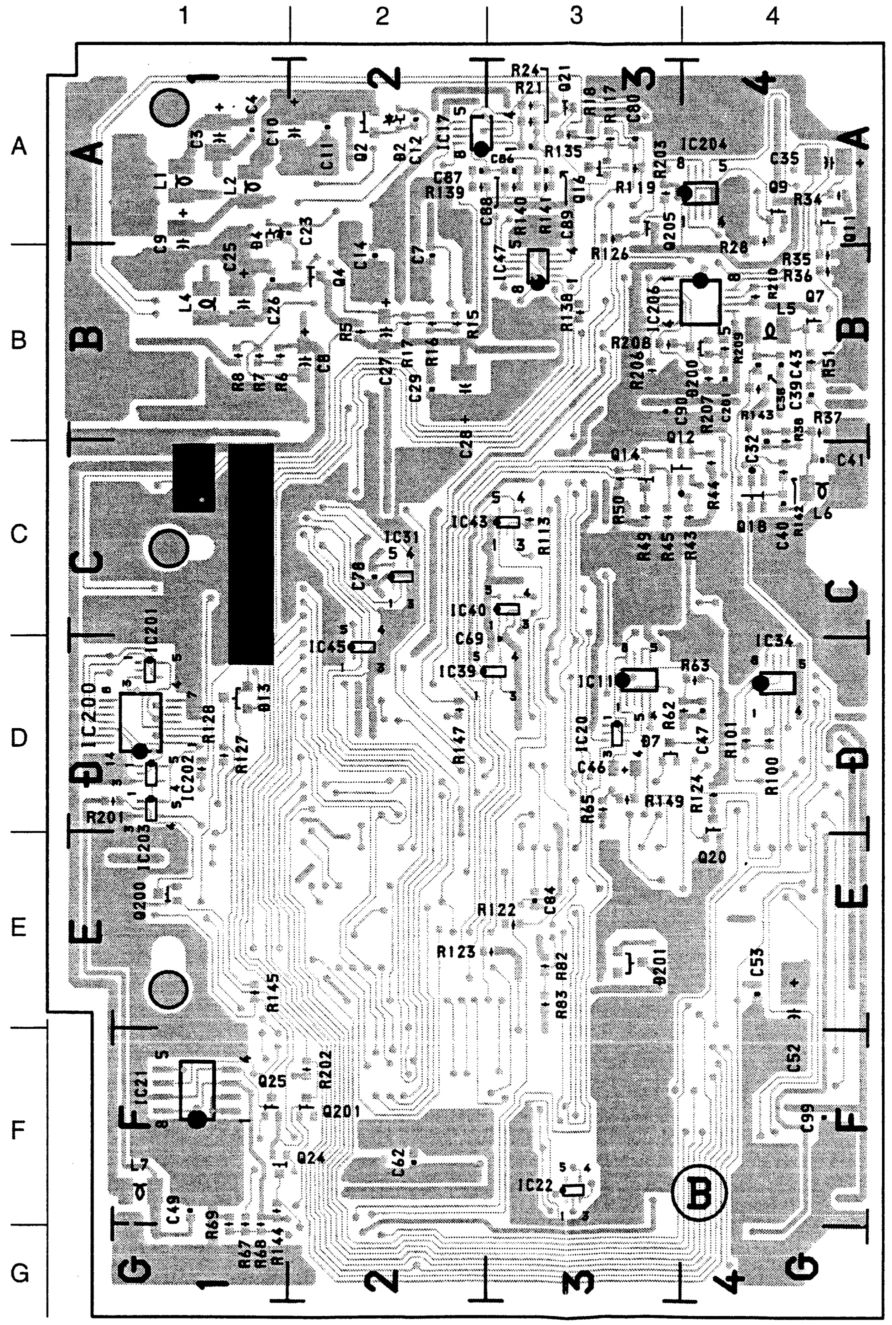
SG-234 - A SIDE -
1-657-449-12, 21


1
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A
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C
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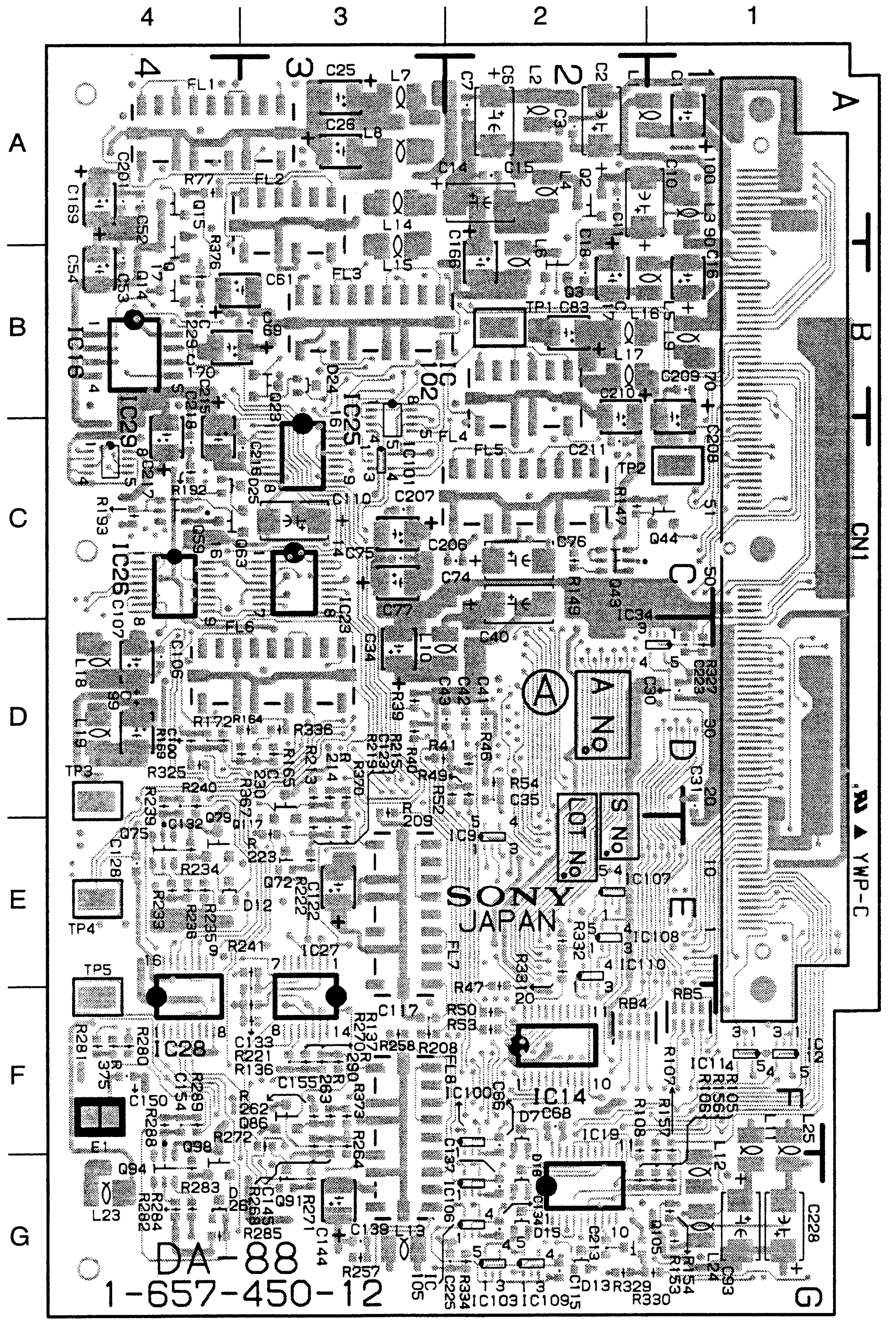
SG-234 - B SIDE -
1-657-449-12, 21

DA-88 BOARD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A
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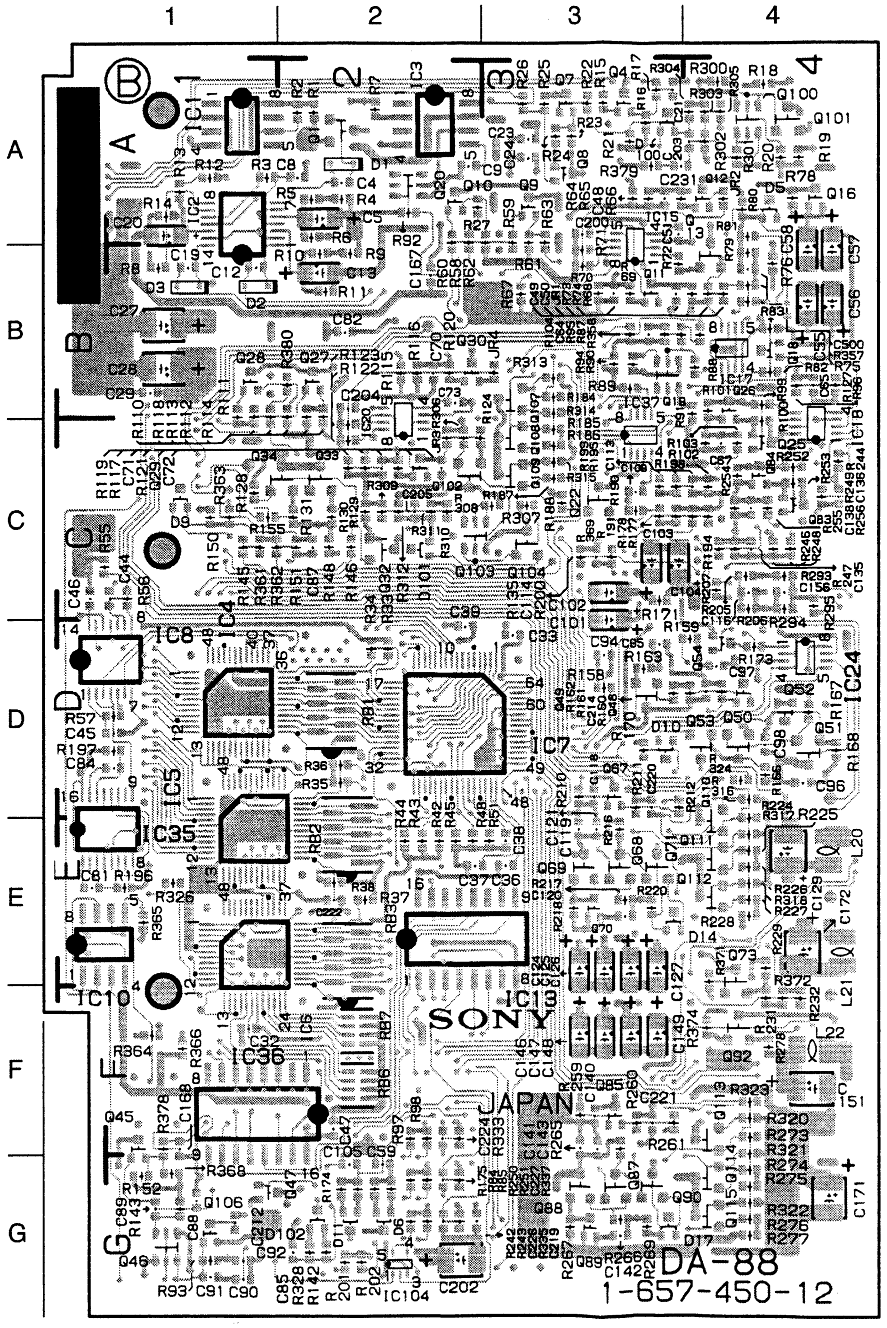
C
D
E
F
G
CN1
YMP-C
SONY
JAPAN
A No.
S No.
LOT No.
IC14
IC28
IC27
IC19
IC25
IC26
IC16
DA-88
1-657-450-12

DA-88 - A SIDE -

1-657-450-12, 21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A
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C
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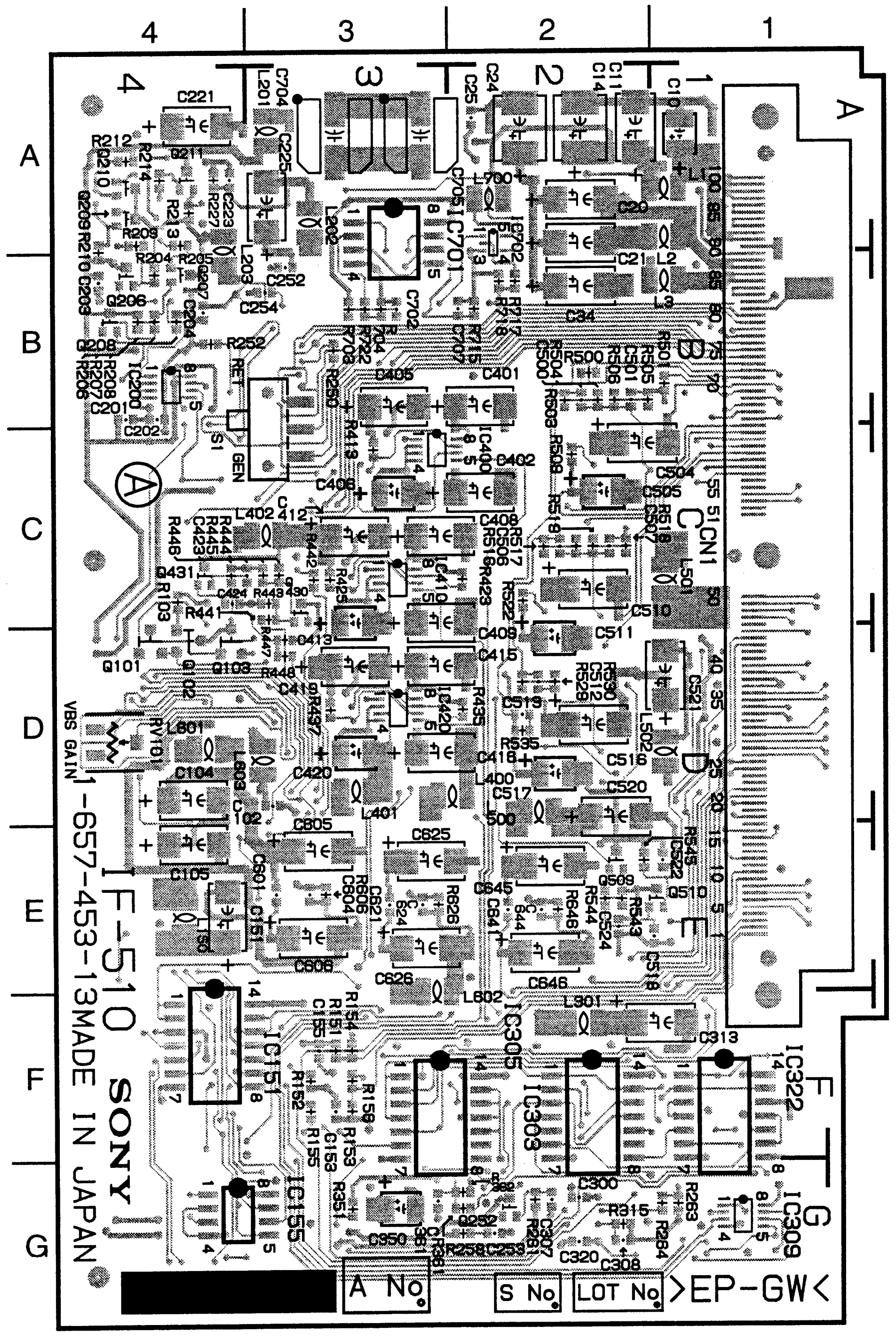
IC4
IC5
IC7
IC8
IC35
IC10
IC36
IC13
IC24
SONY
JAPAN
DA-88
1-657-450-12

DA-88 - B SIDE -

1-657-450-12, 21

IF-510 BOARD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A
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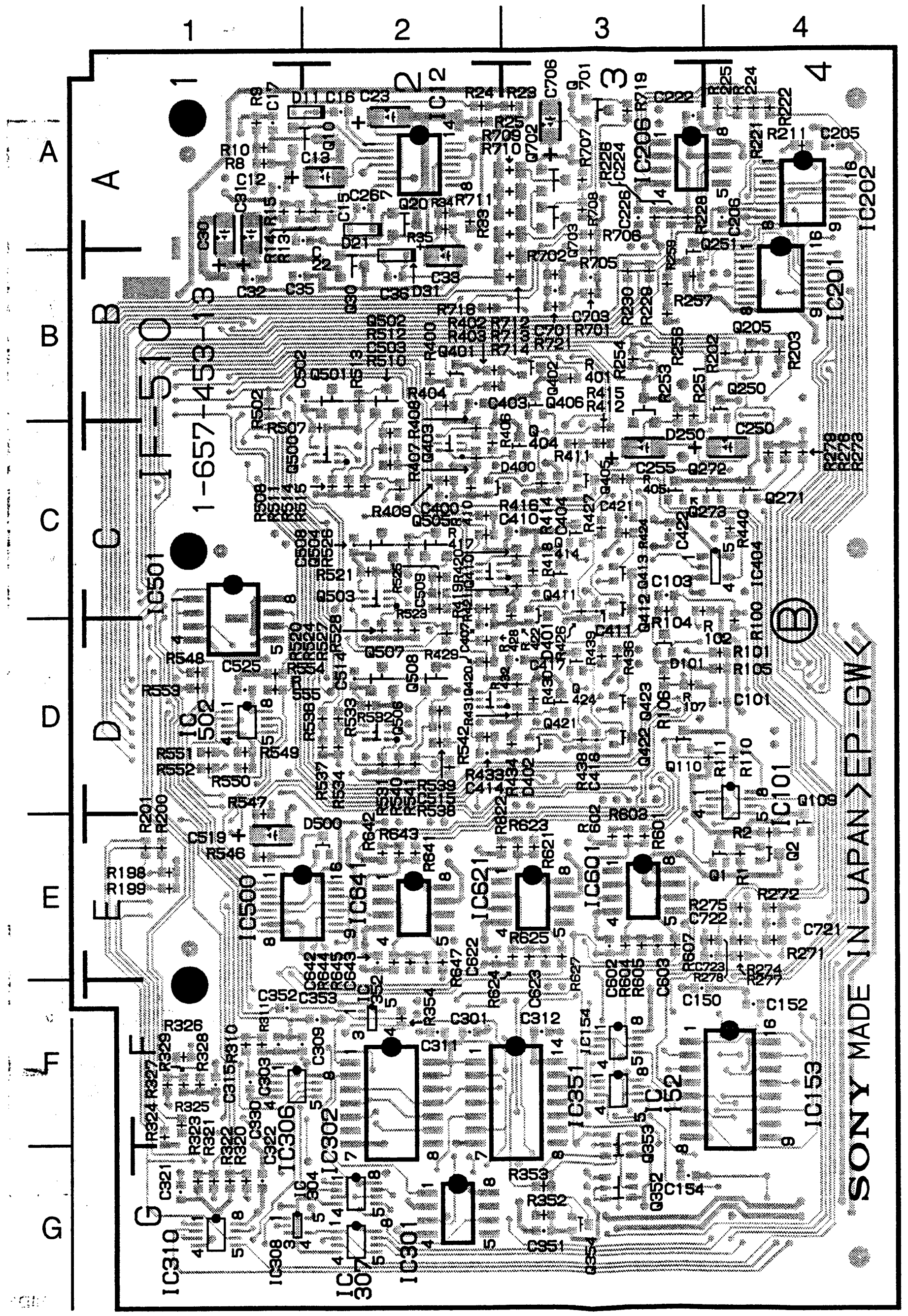
C
D
E
F
G
CN1
IC151
IC155
IC303
IC305
IC309
IC322
IC400
IC701
IF-510
1-657-453-13
MADE IN JAPAN
SONY
A No
S No
LOT No
>EP-GW<

IF-510 - A SIDE -

1-657-453-13, 22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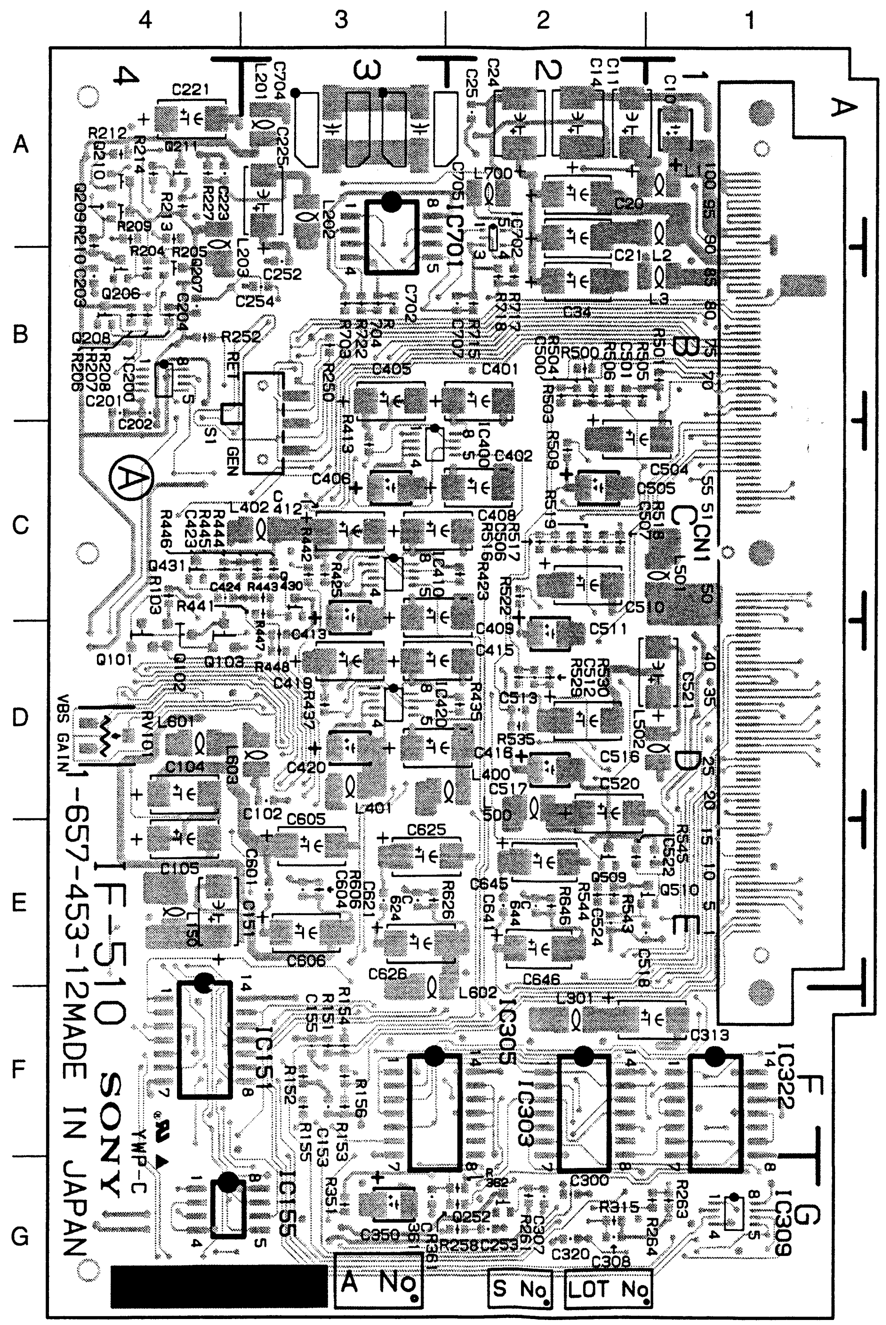
IC101
IC152
IC153
IC201
IC202
IC206
IC301
IC302
IC306
IC307
IC310
IC351
IC404
IC500
IC501
IC502
IC601
IC621
IC641
IF-510
1-657-453-13
SONY MADE IN JAPAN
>EP-GW<

IF-510 - B SIDE -

1-657-453-13, 22

BVP-550 (SY) : S/N 50001 through 50440
: S/N 15001 through 15440

IF-510 BOARD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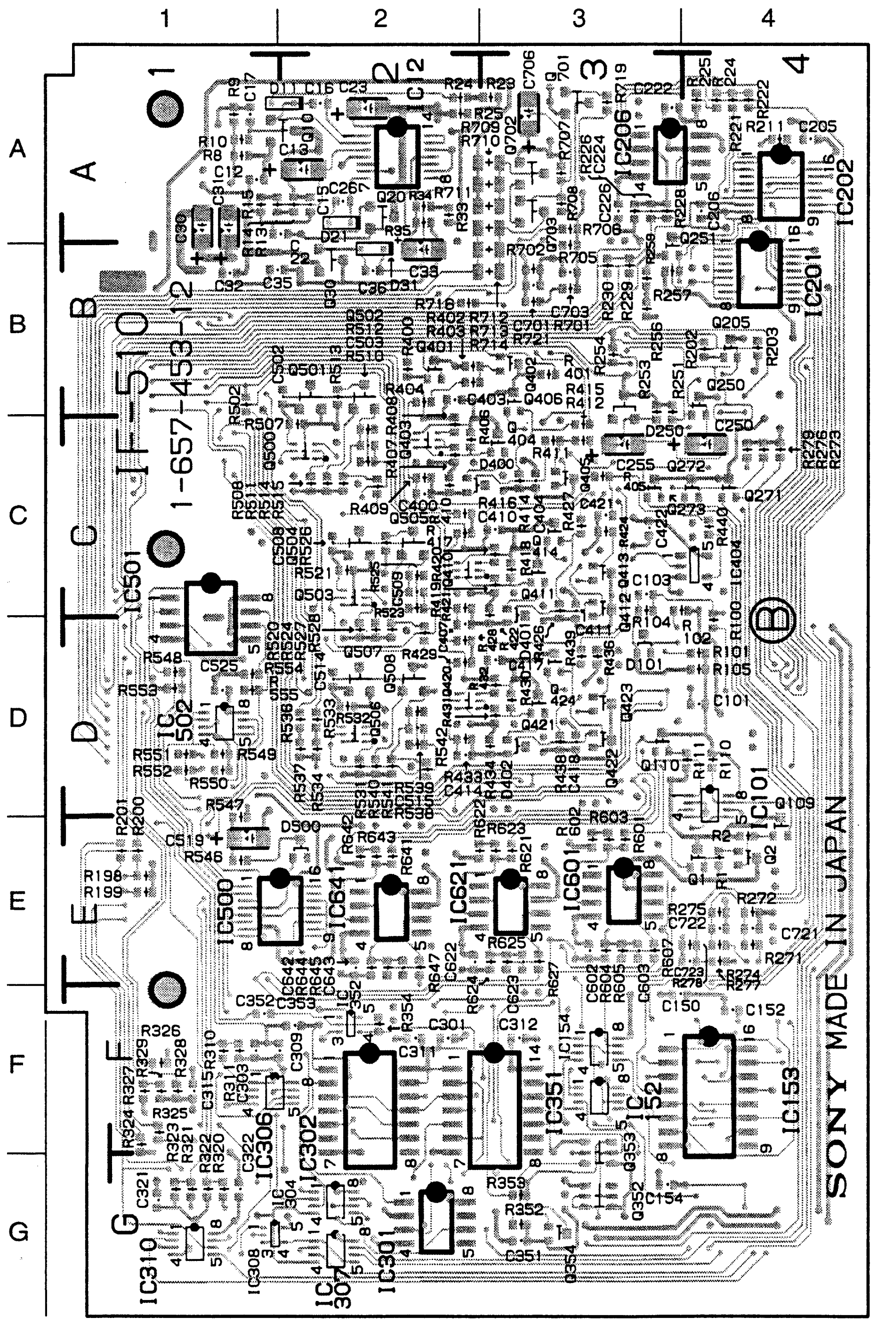
F
G
CN1
IC701
IC400
IC151
IC155
IC305
IC303
IC322
IC309
VBS GAIN
1-657-453-12 MADE IN JAPAN
IF-510 SONY
A No.
S No.
LOT No.

IF-510 - A SIDE -

1-657-453-12, 21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A
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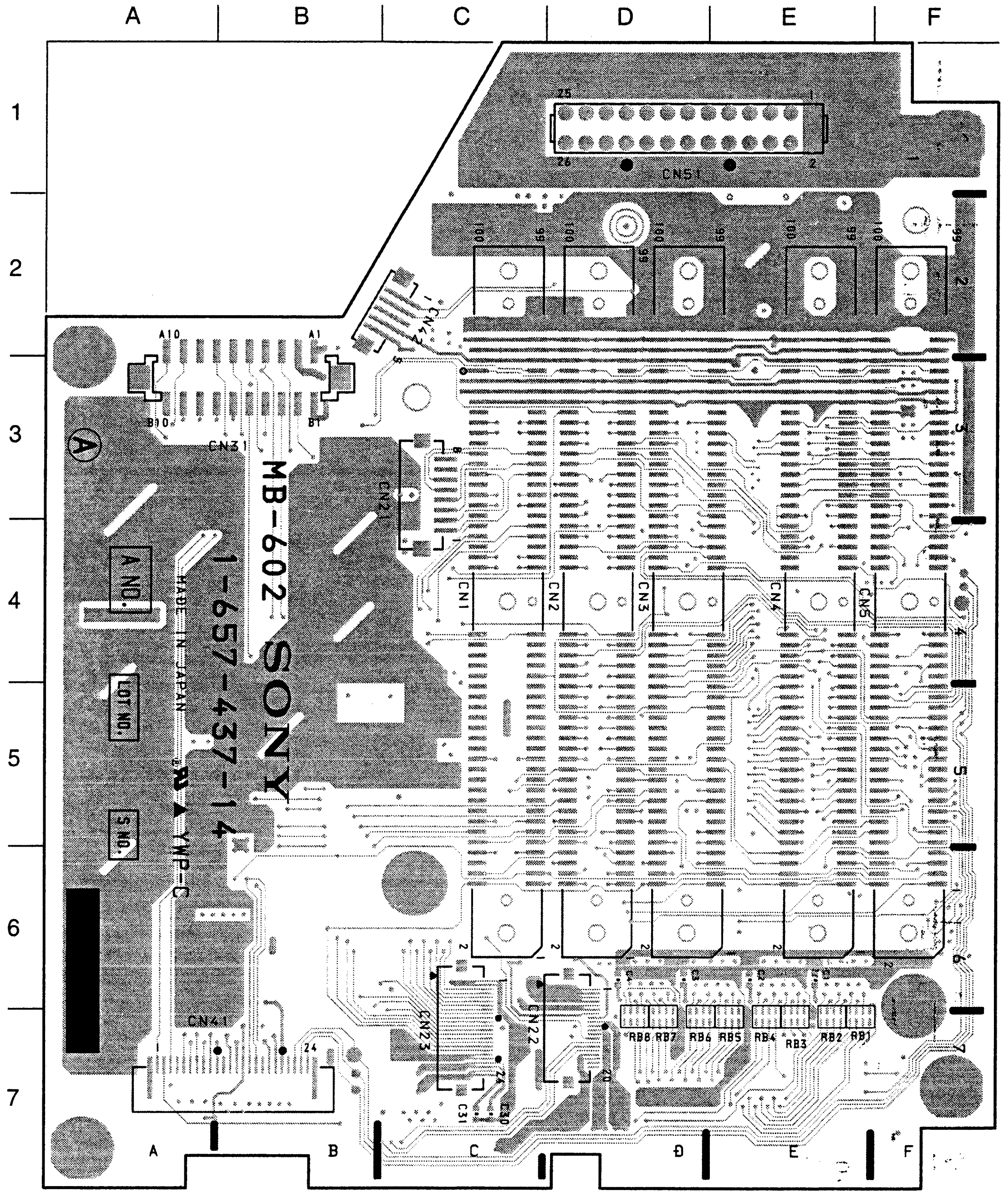
IC502
IC500
IC641
IC621
IC601
IC101
IC201
IC202
IC206
IC153
IC351
IC301
IC302
IC306
IC307
IC310
IF-510 1-657-453-12
SONY MADE IN JAPAN

IF-510 - B SIDE -

1-657-453-12, 21

MB-602 BOARD


A
B
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D
E
F
1
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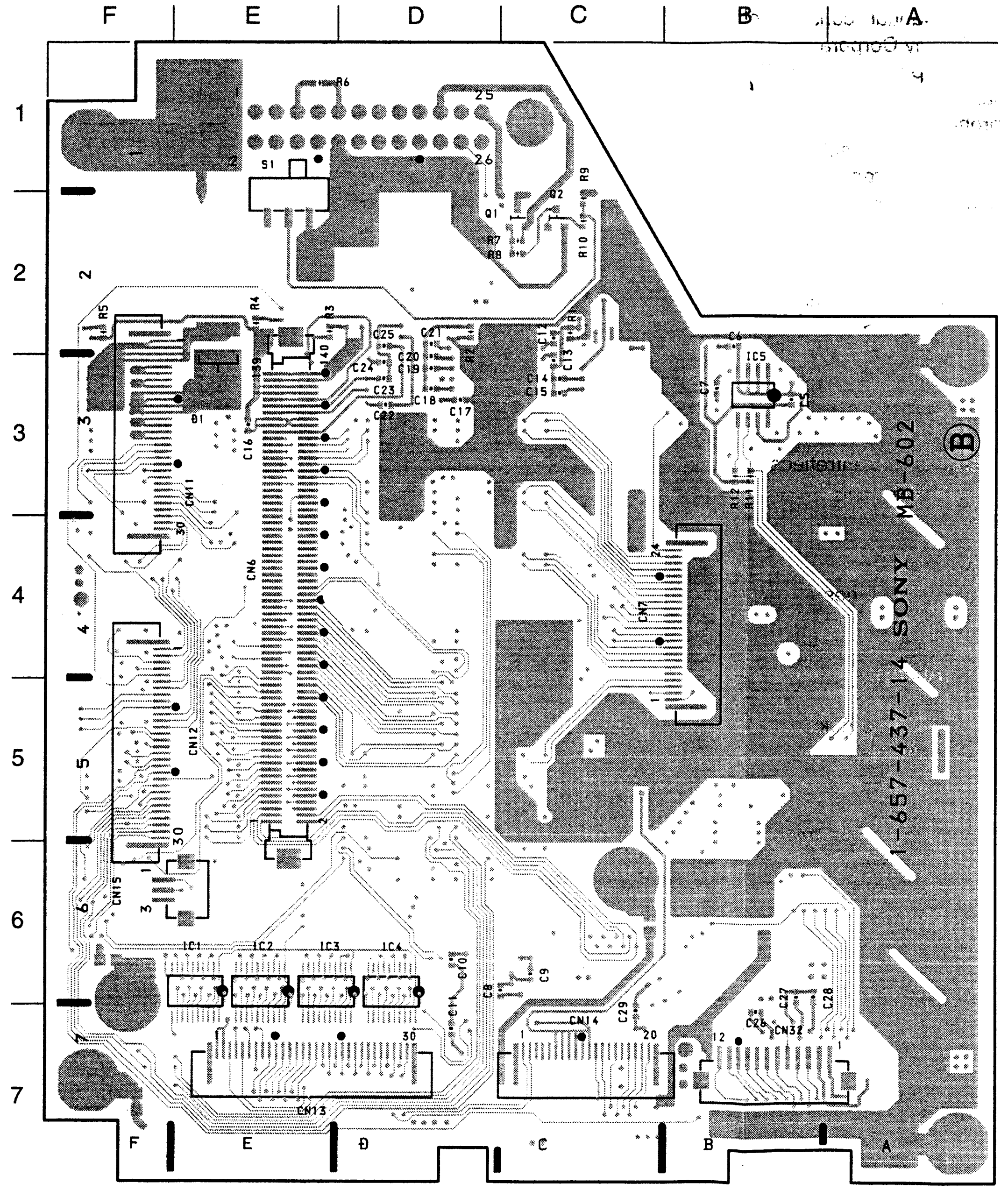
6
7
CN51
CN31
CN41
CN21
CN22
CN23
CN1
CN2
CN3
CN4
CN5
RB8
RB7
RB6
RB5
RB4
RB3
RB2
RB1
C30
C31
A NO.
LOT NO.
S NO.
MB-602
1-657-437-14
SONY
MADE IN JAPAN

MB-602 - A SIDE -

1-657-437-14, 21


F
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S1
Q1
Q2
R6
R7
R8
R9
R10
IC1
IC2
IC3
IC4
IC5
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CN7
CN11
CN12
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CN14
CN15
CN32
C8
C9
C10
C16
C17
C18
C19
C20
C21
C22
C23
C24
C25
C26
C27
C28
C29
MB-602
SONY
1-657-437-14

MB-602 - B SIDE -

1-657-437-14, 21

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3-190-368-03

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Broadcast Products Company

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